

Precision SHOOTING

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a magazine for Shooters by Shooters

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COVER PHOTO

The covered benchrest firing line constructed by the Chippewa Rifle Club last winter on their range at Easton, Ohio. To use a target butt shorter than the firing line, the benches are arranged on a broad arc, in order that each bench will be exactly the same distance from the target as every other bench on the line.

This style of bench, with the shooter sitting in the rear center for firing right or left handed as desired, seems to be becoming the popular style for recently constructed ranges.

Also becoming conventional are the covered firing lines with concrete slab floors and solid cement-block pedestals for bench legs. Such range facilities are without doubt desirable, perhaps necessary for the bigger matches, but they do represent an investment that is beyond the financial means of many clubs and, if they are demanded by competitors, will very drastically limit the ranges available for holding registered benchrest competitions.

P. H. T.

ANNOUNCEMENT OF SUBSCRIPTION RATE INCREASE

It has been six years since Precision Shooting made its last subscription rate increase. All of our costs have risen steadily since then, in common with the general trend with which our subscribers are undoubtedly familiar. After a careful review, we have reached the conclusion that it will be necessary for us to increase our subscription rates to meet rising costs.

Effective with our November issue, new rates will be \$4.50 for a one year subscription and \$4.00 per year for subscriptions for two or more years. Any subscriptions received prior to October 15, 1964 will be accepted at the old rates. This includes renewals and extensions. All subscriptions received after October 15, 1964 will be subject to the new rates.

Programs are under way to provide subject matter for our readers which we feel will be well worth this modest increase.

A BIEHLER & ASTLES ANNOUNCEMENT

(Editor's note: The following authentic announcement from Ray Biehler, which is approved by Walt Astles, regarding the Biehler & Astles bullet making equipment situation will be, we believe, of interest as information to many of you readers, especially benchrest shooters.)
Dear Fellow Shooters:

Due to reasons of health on my part, my former partner Walt Astles and I have had to dissolve our Biehler & Astles partnership for making bullet dies. As soon as possible, Walt expects to go on alone with our former work. Walt will expand a private shop in his home, since previous facilities we used at the school I am connected with will no longer be available. Walt will operate under the following name and address:

Walter Astles, B&A Bullet Dies
(Successor to Biehler & Astles)
86 Whiteford Road
Rochester, New York

Walt expects that it may be around two years before he will have sufficient additional equipment to make **complete new die sets**. In the meantime, however, he will render all such repair service to past customers as is possible with his present equipment. Although Walt and I will continue in close contact, since I am no longer connected with our previous work, all inquiries should be addressed to Walt at the above name and address.

All existing orders which were on the old Biehler & Astles books have been turned over to Walt. As soon as he is able to produce new dies again, any customers with existing orders who may still wish delivery will receive his attention.

Due to our keen interest in our previous work, the many fine friends it brought us, and our own close friendship, Walt and I greatly regret my inability to continue our previous work together. We wish to express our deep appreciation to all our old customers for their business and for the many most pleasant friendships with them that have developed.

Ray Biehler

MERCURY AND BRASS

(The following is correspondence between Jesse Grigg and Paul McKnight Deeley after publication of Mr. Deeley's letter in June/July P. S.—page 3—plus some additional information.)

Dear Mr. Deeley:

Before writing that statement about cleaning rods (REMOVING LEAD WITH MERCURY—P. S., May 1964) I immersed both an aluminum and a brass rod in a bore containing mercury. To date neither has shown any sign of damage. In making that statement it was assumed of course that the time of exposure of the rod to mercury would be of short duration and that the event itself would occur very infrequently.

Since publication of your letter I have experimented further by allowing a short section of brass rod to stand for a time in the mercury bottle, wiping it off after removal, then putting it aside to await results. After 12 hours and 45 minutes of immersion and the lapse of several days waiting there is still no evidence of damage, nor change of appearance.

Nonetheless chemistry books do state that mercury amalgamates with other metals (iron excepted), but according to my observations the process must be very, very slow. In event of brass simply immersed in pure mercury I suspect that it is a surface phenomenon. On the other hand, in damage to brass cases by penetration, an old Lyman Handbook gives me the impression that stretching of the brass is one of the required conditions for penetration. Anyhow, fulminate of mercury is a compound of mercury, carbon, nitrogen, and oxygen which no doubt becomes something else when it is detonated.

Sincerely,

Jesse M. Grigg

Dear Mr. Grigg:

Many thanks for your letter which was forwarded to me by Mr. Teachout of Precision Shooting. Sorry if I seem to have started any sort of controversy but despite what your experience indicates I still say that, based upon my own experience, mercury is plain poison where brass is concerned. I shall quote you a few references picked at random but my original statement about the matter was not based upon such material but rather upon personal experiences encountered in the field of electrical engineering. In much electrical equipment mercury has been used as a contact material in certain type switch mechanisms. Mercury has been and is being used extensively in gaseous

devices such as lamps, rectifiers and such. I can distinctly remember as far back as 1917 when disastrous end results were caused by brass parts coming into contact with mercury.

Now to quote you a few references which pertain directly to the 'gun game':—**PRINCIPLES AND PRACTICE OF RELOADING AMMUNITION** by Earl Naramore—chapter 8—page 122.

"It has many faults (mercuric primers), it's rather costly; it has to be manufactured in very small quantities at a time; to be shipped safely, it must be wet; it is poisonous and working with it involves hazards of health; it becomes inert with long storage; special precautions are necessary to guard against accidental explosions and, especially in warm climates, it attacks the copper and brass elements of the primer it is loaded in; then upon firing, the mercury vapor from it attacks brass cartridge cases, rendering them brittle and unsuited for reloading."

From page 123:—"Brass has a crystalline structure. When a cartridge is fired with a mercuric primer, the mercury attacks the brass by penetrating in between the crystals and destroying the cohesion between them, thus the brass is weakened. The action is most rapid where the brass is hardest, as cold-work, at the outset, sets up internal stresses. (Writer's note: Actually the work hardening changes the shape and size of the crystals and as chemical action takes place at the crystal boundaries, rate of such action is thereby effected.) There is no way of stopping this action of mercury; washing only accelerates, and even plain water will increase the rapidity of penetration of the mercury, etc., etc."

Excerpts from **COMPLETE GUIDE TO HANDLOADING** by Philip Sharpe:—See photo illustrations on page 35 where the caption reads; "right, mercuric primers rotted the brass of this cartridge case until it could be broken with the fingers." Also see photo on page 36. Also see pages 54 and 55 wherein it can be noted that in the late 1890's some of the ammunition makers, who for years had sold components to reloaders and had advocated reloading, began to publish notes on their smokeless powder shell boxes, saying; "These shells cannot be reloaded." The embrittlement and splitting of brass cases was somewhat of a mystery until cleared up in the annual report of the Chief of Ordnance for the year ended June 30th, 1897. An extract from page 26 runs as follows; "The principal cause of brittleness in the present shell, which is made of brass composed of 70 copper and 30 zinc, has been traced to the action of the mercury in the primer composition reacting on the metal of the case, particularly on the zinc."

At random I selected an older issue of the *Ideal Handbook*. As it turned out, it was number thirty six of the year 1949. Pages 30, 31, 49 and 50 are devoted to the subject of mercuric primers but I shall quote only a few sentences:—"while we have been unable to determine the exact composition of the residue from mercuric primers, we do know it contains mercury in one form or another. Mercury has a natural affinity for brass and will amalgamate with it. In the presence of an acid mercury will penetrate a cartridge case in the space of a few seconds."

Incidentally, mercury will amalgamate readily with aluminum also if you break through the oxide coating that is always present. Just immerse the aluminum in mercury and while so immersed scrape away the oxide so that the mercury can come in contact with the virgin metal. But nothing to worry about as the practically indestructible oxide is always present.

Yours very truly,

Paul McK. Deeley

(Editor's further comment: A few days after the foregoing letter copy, Mr. Deeley sent the editor a short piece of brass tubing with this accompanying note; "I am taking the liberty of sending you herewith a sample of what I have been talking about. This brass tubing which was the most available piece of brass, has had mercury rubbed onto one end of it. Two days ago this was. Already I have crumbled the end with my fingers and by the time it gets to you it should be really brittle throughout and the mercury will have traveled for a considerable distance along the tube."

When the tube reached here the mercury had spread some 3 to 4 inches along the length of the tube. The tube could be crumbled in the fingers on the end where the mercury had been applied. Now, 6 days after the tube was mailed and 8 days after the mercury was applied to it, the brass tube is brittle and crumbles for the entire area where the mercury shows on the outside surface. The end of the tube where the mercury does not show on the surface is normal and is not brittle.

My guess is that a brass rod which had been used some time for normal cleaning might have a film residue from oil and powder solvent adhering to its surface, and that this might somewhat protect the surface of the brass rod as does the oxide on an aluminum rod, and thus perhaps explain the results of Mr. Grigg's experiment. I'd guess it possible that if he had bright-polished a section of his brass rod which would be in contact with the mercury.

I wouldn't, myself, hesitate to employ a used brass cleaning rod for what a rod is necessary in a lead-cleaning with mercury, if that was what was available for the job, and I wouldn't feel it any great loss if the rod should be spoiled—I personally don't care to use either brass or aluminum rods for my own rifle bore-cleaning jobs.)

JACKETED PISTOL BULLETS

Edward M. Yard

Experimental Ballistics Associates

IN ANY GUN you shoot, it's the bullet that delivers the goods. Internal ballistics count only in energy once the projectile clears the muzzle. It's a good and accurate ball, or it isn't, but it's all on its own out of the bore. If launched straight, the rest of its accuracy course is its own responsibility.

NOBODY QUESTIONS jacketed bullets for rifle accuracy. Out of the target rifle barrel, they rule the range from 100 to 1000 Yds., and are uncontested. At these and longer ranges, lead bullets aren't suited. They can't take the velocity for long range, nor can they measure up at the bench rest distances. The lead ball is good in its place. Soft lead bullets are good only at low velocity, they will lead the bore as f.p.s. go above 800. Lead alloy bullets reduce the leading, but will not expand to give best shock.

Jacketed handgun bullets by using soft lead cores aimed to fill this gap. They offered a means of propelling the expandable core without leading problems. This point they achieve, with a full diameter soft lead core exposed at the tip, these bullets expand. The copper jacket cup, extending to within 1/16" of the nose, reduces leading to fully useable limits. Clearly they solve the pistol hunter's problem simply by providing suitable bullets, jacketed like the rifleman's. Performance is excellent.

ACCURACY ???

Somehow jacketed bullets for handguns came under question as to accuracy. Claims have been made that they just aren't on the beam, a miss is likely at hunting distance. Authoritative source tests have shown group size figures to support this point. Questions have been raised, so let's get to the facts.



The range on which the accuracy testing of jacketed bullets in revolvers was done. This tree protected private range of Mason Williams provides for test shooting at 200 yards; has a shooting bench at one end for the 200 yard shooting and another bench midway for 50 and 100 yard test shooting.

Good Bullets Shoot

A Good Bullet of any type will yield good results in any suitable gun . . . A poor bullet of any kind won't shoot in anything.

Far beyond a question, the jacketed rifle bullets that are good outshoot any other type. Between a rifle and a pistol lie only barrel length. In viewing a revolver, it has a gap between barrel and cylinder, and a really long jump from cartridge to rifling. These things have no fundamental relation to which type of bullet should do the best.

There is no reason at all why a jacketed bullet should not shoot well in a revolver. If these are ultra accurate in rifles, I'd like to see an explanation why they are not equally suited to pistols. They are suited to pistols, of course, and the proof of it is here.

Jacketed Pistol Bullets Are Accurate

A good jacketed pistol bullet will shoot the ten ring out of the target at 50 yards. No short barreled one-hand gun is going to outshoot a rifle, not even the XP-100. This ten ring accuracy is par.

Let's not expect 1" groups at 100 yards from a scope sighted revolver. Somebody will show you one, I'm sure, but don't take bets on shooting one. Many good rifles won't shoot a 1" group at 100 yards, or even a 2" or 3" one every time, but are still considered accurate for hunting. The 100 yard small-bore rifle target has a 2" ten ring designed for prone shooting with a 28" barrel. Bear this in mind.

A Smith & Wesson .357 Magnum revolver, 1X scope sighted, with heavy hunting loads behind 160 grain jacketed bullets (hollow point and soft core) will punch the center out of a 50 yard slow fire pistol target. This is in proportion to what hunting rifles will do. Let us note that we are talking about actual gun accuracy from hand-held pistols. While the shooting was done from sand bag rests on a solid table, you just don't achieve bench rifle conditions.

Three inch groups from hand held 1X scope sighted magnum handguns at 50 yards are assured any experienced shooter. No wild fliers that are not your fault will occur with good bullets. Heavy loads won't reduce the accuracy of these copper cupped slugs.

THE BLUE TRAIL RANGE

Home of: The Conn. State Rifle & Revolver Ass'n. Shooters and families welcome—90 miles from New York World's Fair.
120 covered firing points—25 yds., 50 yds., 100 yds.—lighted.
50 pit operated targets at 200 yds.
Shotgun area—Snack Bar—Lounge—Store—Rest Rooms. Send for free 1964 program and brochure.

316 North Branford Rd.
Wallingford, Conn.

Results with Jacketed Pistol Bullets

Experimental Ballistic Associates chose for their 1964 Annual Meeting to test the accuracy of New Line jacketed .357 pistol bullets. The head man of the outfit, Mason Williams, is an E. B. A. associate. He raised the question of a check-out. That's why these bullets were used.

Since our point was to show that a good jacketed pistol bullet would, or would not, shoot, we dumped the problem right in Williams' lap: Make up loads to shoot your point. !!

These bullets are for hunting. They should be SHOT HOT, or not at all . . . No point testing gallery squibs with game type slugs. — So Mason was instructed to concoct a full scale "Bear Load," and he did. Fifteen (15.0) grains of #2400 powder behind a 160 grain jacketed hollow point New Line Nuro-Shok bullet, ignited by a CCI Magnum primer was his answer. This combination in .357 cases isn't a pale marshmallow. Solid and sound Smith & Wesson revolvers will digest it regularly. It chronographs at 1345 F.p.s. from a six inch revolver barrel (same as the .41 S&W 6" revolver barrel). Some converted old-Magnum with 210 grain bullet and their sters will find this too-too torrid.

Test Targets we shot with this stuff at fifty yards from the S&W revolver, sighted with 1X scope were good. They indicated the ability to shoot the ten-ring out of the target, to place a bullet in the killing zone of eastern big game every shot at woods shooting distances (up to 100 yards). This performance is about that of the sighting equipment and the gun used. Nothing more may be asked of the bullet. It should be noted that, unlike rifle bench rest shooting, the gun is still primarily supported by the shooter, only body sway is eliminated. The recoil is so sharp that any attempt to hold the muzzle causes erratic results.

Groups showed no dispersion or wild flier shots. They indicated the ability to shoot the ten ring out of the target, not for one, but for nine different shooters, and for twenty-six targets, all from hand held revolvers.

Statistics Show Uniformity

A couple of targets shot by one guy, out in his pasture don't mean a damn thing. This sort of report we've seen often enough. Neither does a single nice group prove what can be expected in general. But when a goodly group of shooters fire several targets apiece, before many more witnesses, and every shot is counted and tabulated, then we have a useful and a believable result. Not a statistic so divorced from reality as to be meaningless, but a criterion.

Twenty-six five shot groups were shot with this HOT HUNTING load by nine shooters. No one or two marksman could have done this series without fatigue. Results would lose their meaning. These targets show a normal dispersion and distribution of shots.

Thirteen five shot groups (or one half) were 2½" to 3½" in diameter, 7 were
(Continued on Page Four)

Jacketed Pistol Bullets

(Continued from Page Three)

smaller, 1½" to 2½", and one was under 1½", and only four were 3½" to 4½", a single was over 5". A plot of these results shows a good distribution. There is nothing to evidence erratic bullet behavior.

No fliers or wild shots occurred, or are indicated, by the targets. These bullets may be expected to shoot consistently as our representative tests show. Any load that will shoot the center out of the 50 yard slow fire pistol target, with knock down punch, is surely good hunting handgun Ammo.

A tabulation of the loads is shown, and a distribution curve has been plotted of the results. It is shown. There is no doubt the results are valid, the sample adequate, and the performance satisfactory.

LEADING

Leading of revolver bores seems a common problem. Most lead alloy bullets are reported to leave deposits in the bore, especially if driven to high velocity. Those jacketed bullets leaving some part of the lead exposed to the bore are commonly, or often, said to "lead."

Just how serious this is, is hard to see. Many millions of rounds a year are shot from .38 Special target revolvers with lead (alloy) bullets, (and even more .22 LR), but very few ever report or experience trouble with leading of the bore.

Whenever higher velocity loads are reported for revolvers, leading of the bore becomes a prime topic. This is true even though velocity may be below standard .22 Long Rifle Rimfires, but below the HS loads, there should be no real problem. Above the velocity of the .22 LR High Speeds, leading is often reported. Evidently the desire to have bullet expansion leads to the use of alloys too soft to stand a useful velocity. Riflemen fire many gas-check bullets at up to 2000 F.p.s. (often more) without leading problems.

Jacketed pistol bullets may leave behind a fouling from which lead flakes may be wiped. This means nothing unless real proof of an effect on accuracy exists. In this E. B. A. test New Line NurO-Shok bullets proved accurate. After 140 shots without cleaning, we were still getting initial accuracy. This is enough for any hunting load.

What About Other Tests?

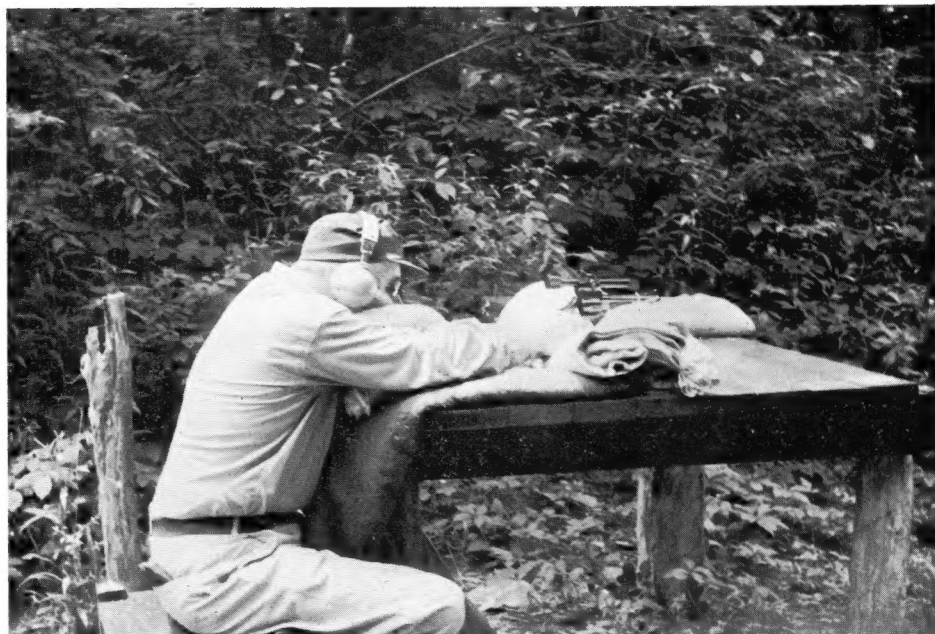
Someone may wish to ask: what about tests of other bullets, other powders, primers, gun makes and sights? There are still other factors that could affect results.

Let's face it, a minimum check of one set of variables takes 100 to 150 shots (25 to 30 5 shot targets) and a panel of at least six expert shooters, to avoid fatigue effects. To mark, post and shoot, record and measure this much data, to have the personnel to do it, is a project. One such test per E. B. A. meeting (usually about 14 associates present), is all that is practical if meaningful results are intended.

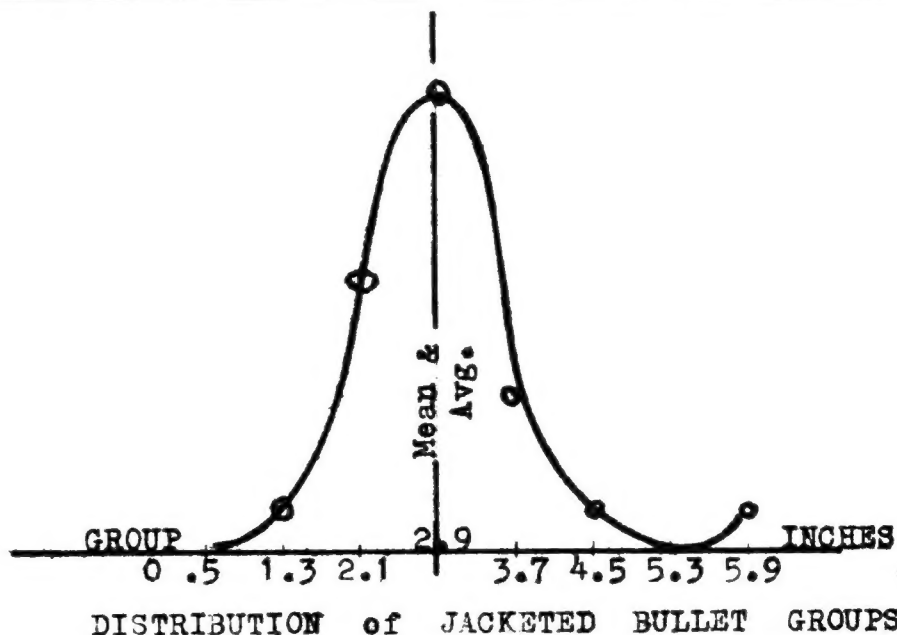
Why not have checked the .44 Magnum? Our panel of experts, Al Dinan, Dick Ceremsak, Williams, the writer and others don't know how to get results we could rely on to be meaningful. We doubt that either any current machine rest or any panel of shooters we could assemble can adequately test the heavy .44 Magnum loads. We are not just concerned with what a component might do in a test gadget, but to test pistol hunting loads in pistols. We believe that the .44 would be testing the man (or machine), not the reverse. That wouldn't answer our question.

Conclusion

Good jacketed pistol bullets, such as the New Line Nuro-Shok 160 Gr. .357's treated here, make fine hunting loads with accuracy approaching that of target pistol ammunition. You may accept them for the chase without fear of failure from inherent unsuitability. You must be sure,



This is how the shooting was done in the accuracy testing of jacketed bullets in revolvers. Gun was rested on firmly rolled blanket, with two-hand hold. Shooter's chin rested on another firmly rolled blanket to provide unstrained, steady head position while aiming with the scope sight.



though, that any ammunition you use shoots well in **your** gun, and that you are both sighted in and have no sight problems.

Load up a batch of ammo with the load and bullet you intend hunting. Test this in your gun as thoroughly as possible, making sure it is shooting as well as you think you can shoot, getting experienced friends to help you if it's needed.

Table of Groups Fired

50 Yds.—5 Shots Each

1.28 Inches	2.92 Inches
1.78	3.03
1.79	3.09
1.92	3.21
2.05	3.25
2.14	3.30
2.18	3.30
2.43	3.31
2.51	3.34
2.51	3.68
2.59	3.98
2.80	4.49
2.91	5.61

Av. 2.90"
Med. 2.91"
22 of 26 less than 3.50"

TOURNAMENT CIRCUIT

NORTH PACIFIC REGIONAL

The North Pacific Smallbore Rifle Prone Regional Tournament was held at the LaGrande Rifle Club range in LaGrande, Oregon, July 11 and 12, with an entry of 51 competitors, an increase of 11 competitors over last year.

With almost ideal shooting conditions, Henry Benson of Salmon, Idaho, won the Regional Championship with the fabulous score of 3199-251x. After dropping one point in the first match, iron sights, he went on without dropping any more points to capture the title.

William F. Schlitzkus of Springfield, Oregon, gave Henry the usual friendly "Bad Time" by having to use the creed-more system to break ties in both Dewar matches. Henry won the iron sight with 400-30x, and Bill won the any sight with 400-31x.

Schlitzkus was runner-up in the Regional aggregate with 3183-233x and R. O'Connor of Missoula, Montana, was third

with 3180-222x.

Class aggregate winners were: Expert; W. J. Schlitzkus, Springfield, Ore. 3174-177x; T. McPhee, Twin Falls, Idaho 3161-159x. Sharpshooter: D. Peterson, Mantica, Calif. 3151-157x; V. Morris, La-Grande, Ore. 3142-138x. Marksman; I. Tomson, Vida, Ore. 3104-108x. High Junior, G. Tuck 3180-193x. High Lady (Junior), L. McBroom 3124-124x.

Gary Tuck chose to accept the Junior category award, otherwise he would have been first Marksman. This boy has been shooting terrific scores since his Dad bought him his Anschutz. He is one of the natural born shooters.

Charles D. Leonard

NEW JERSEY SMALLBORE MATCHES

At the combined New Jersey Outdoor Position and Roseland Spring Position Championships, on the O'Hare Range in Roseland, Dr. Bill McAuliffe easily manipulated himself into winning spot and claimed both titles, as did Marilyn Kress for the distaff side. In pleasantly warm, bright conditions, McAuliffe took the metallic Sitting-Kneeling with 199-12x, any sight kneeling 199-11x and any sight standing with 192-6x, and became a 3-time winner of the 5-year-old Roseland Spring Shoot.

Roy Oster won an award in every match, as would McAuliffe have done had it not been for the prone any sight. Gilbert Graziani's 20X possible prone was a new position tournament record for the Roseland range. (With Rans Triggs around, there have been 40X's fired in prone tournaments.) Graziani was xeroed in on the moderate wind and repeated as winner in the scope Sitting with 199-14x. The remaining match, metallic Prone-Standing, went to Jim Cook's 192-8x.

Aggregate-wise, behind McAuliffe's 787-37x were Oster's 784-45x and Graziani's 782-46x in the scope matches which comprised the Roseland program. Marilyn Kress scored 752-22x. For the State title, Oster held onto runner-up position as McAuliffe outdistanced him 1176-55x to 1169-60x, and Ken Stannard came in third with 1159-35x. Marilyn totaled 1113-27x to become High Lady.

The New Jersey State Postal (Position) Team posted a creditable 2798-75x, sparked by Stannard's 288-12x.

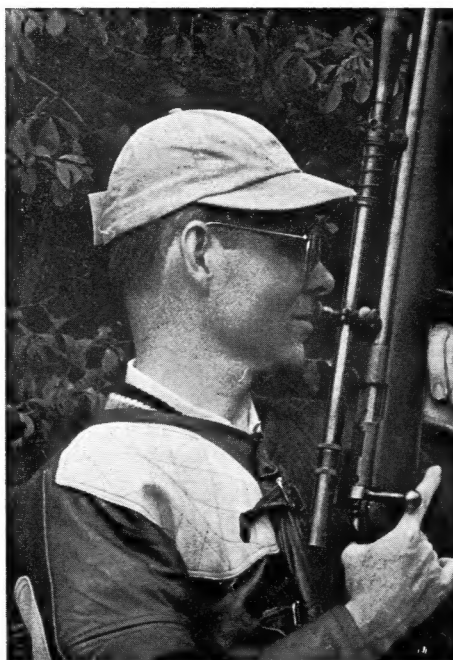
DELAYED NEWS FROM MARYLAND:

It was a battle to the finish in the Maryland Gallery Rifle League as the University of Maryland and the Greenbelt Wolves were neck and neck going into the final match. Both teams topped their previous high marks on the ISU gallery target, as University of Maryland attained a 1498, and the league title, over Greenbelt's 1487. Final tallies gave Maryland 12 wins and 3 losses, Greenbelt 11 wins and 4 losses, and National Capital Rifle and Pistol Club 10 wins and 5 losses.

According to Freeman Morgan, Sec.-Treas. of the Maryland and District of Columbia Rifle and Pistol Ass'n, "Those college boys have what it takes to come through when the chips are down." Yet, it was Miss Jean Hayes, who posted 375 in the last match to lead the entire Maryland team and "put their win on ice." Pete Gordon of Md. fired top individual league score of 382, and Ralph Robinson of Greenbelt was runner-up with 380. Patricia Kinsella's 377 led the women and juniors.

When Patricia Kinsella established a Women's Record with 162 consecutive 10's sitting, with scope, at a senior sectional in Pa., she was using a scope for the first time in open competition. At plus 140 10's she ran out of Mark III and had to wait while a forage party rounded up some. This seemed to break the cadence and the third shot was out. The previous record stood at plus 49 10's.

SEPTEMBER 1964



Dr. William McAuliffe



Marulyn Kress

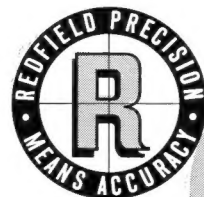
LAST AUGUST I reported to you that the Pennsylvania State Postal Team score of 3991-256X looked like the winner "to date." The winning state team was recently announced as being Illinois, with a score of 3984. No, I was not in error, and neither was NRA at fault. This miscarriage of justice was due to the negligence of the club sponsoring the 1963 Pennsylvania State Matches in failing to forward the scores to NRA. A well-known shooter from that state comments, "It was extremely unfortunate as we had about four young shooters on our team and they were very proud about it and would have gotten a big lift out of being on the winning team."

Betty S. Duncan

IOWA PISTOL MATCH

The Cedar Rapids Pistol Club (Iowa) put on a 2700 pistol tournament for 51 competitors, July 26th, at which they experimented with the use of the no alibi rule. Previously a "no alibi" match had not been held in the state of Iowa. The club has only a 30 point range and it was felt that this rule would help shorten the time required for the match, so that with two relays the match could be finished early enough so shooters would not have to

(Continued on Page Fifteen)



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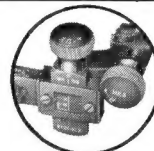
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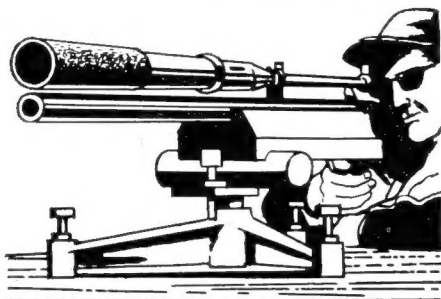
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GREATER PRECISION IN PRONE SHOOTING VIA GRATER THEORIES

Part III

By Betty Summerall Duncan

In discussing the spotting scope, Bill says, "The power should be chosen for the conditions at hand. When I shoot iron sights, I use the spotting scope primarily to pick up the conditions, because my shots should follow a pattern and a point of impact; therefore, I do not need the sharpness to see an individual shot. Consequently, it is slightly out of focus. When I'm shooting scope, I use the spotting scope only as a double check on conditions. In both cases, it's important that one use, if at all possible, the opposite eye from the one he is shooting with. Thus, he eliminates the chance of strain. I mainly use a 25-power eye piece in a Bushnell 45-degree angle spotting scope. This is a definite advantage as I never move out of position, except for a slight turning of my head, to look through the scope."

When it comes to **doping**, most of you will undoubtedly benefit from Grater's vivid analysis of his technique in shooting's most critical area. He believes the subject of doping to be "probably the most trying of any one subject for a shooter to define. Each one has his own way of doing it. And, it just shows that some are better than others. My approach to doping is a pure scientific one with the trust of a little luck thrown in. My procedure before I fire a shot is to roughly estimate what the average velocity and direction are going to be for a 20-minute period. I then sight in with this average condition with a center hold. The minute I am confident that my sights are zeroed and the conditions are steady, I go for record. This may be after 3 to 5 shots or more. The rhythm and speed of firing is of utmost importance. From the time that the condition is recorded and the point of aim decided upon, the shot should be commenced as quickly as possible. One should continue to shoot in the same average condition, observing the placement of shots and slightly compensating for any variation from shot to shot. In extreme changing conditions, it warrants the shooter to stop completely or continue the rhythm of firing, but on the sighter. But, do not spend excessive time trying to build up confidence or trying to hold so closely that you shoot your sighter up to the point where you can no longer record your point of impact. Many shooters fire too many sighters and end up with a better score on their sighter than they do for record. When I'm shooting iron sights, I am observing many things while I am in position. I am looking at the last point of impact of my shot through my scope, recording the mirage, quickly checking the angle of the flags, all while I'm loading the rifle. Upon deciding on the hold, I swing over to align my sights, catching the angle of the flag which I have at the firing line, making sure it's the same, align the sights, and release the trigger. This process, once the sights are aligned, should not take over 5 seconds . . . In scope shooting, I use the mirage through the rifle scope, and record the point of impact of the last shot, watch the angle of the wind flag, but shoot faster, due to the fact that the sights are already roughly aligned. In shooting both iron and scope, I am able to observe the range flag with my left eye while I'm sighting with my right. This points out one important factor—unless you are not using your master eye, you should not use a blinder and you always should keep your left eye open."

Continuing, "If one were to observe my shooting procedure, he would note that I shoot very quickly, but in spurts. While the condition is the one you are zeroed in for and is steady, you should get your

shots off as quickly as possible, but when it changes, you should stop and wait for it to return to your zero. It might be pointed out that if this is a long period of time, you periodically should fire a shot through your rifle so as to keep the barrel at a constant temperature. In holding off, both with iron and scope, I do not like to go much farther out than just outside the 10-ring. I have held with iron sights to the 9-line, but this has been in team match competition where one's partner has complete observation of the conditions. I find that when you go outside the 10-ring in individual competition, you should correct your sights because you are narrowing the amount of area that you have for error. I do believe that you have to hold off rather than click in quick-changing conditions, for you are too apt to lose track of the amount of clicks that you are correcting. Thus, once you lose track, you are lost. So, in essence, my doping ability comes from these facts—I observe the mirage at the target, the angle of the flags on the range, at the firing point, the feel on my face, and the use of a sort of 6th sense, and a lot of luck. I think that any top shooter who shoots a good score will admit to himself and others that he had a small part of luck with him."

What do you think about when firing a match? Bill observes, "It is quite evident that there is a varied opinion regarding the **concentration** factor. My own feeling is that once you are on the line and you are in a proper position and your sights are aligned properly, there is only 5% of your concentration used in routine. The other 95%, I feel, should be dedicated to the proper mechanics and interpretation of estimating conditions. After all, if you are an experienced shooter, you should not have to concentrate on how to load or which way to turn your sights. I think there is only one shooter whom I have observed who might spend more time on his attention to conditions. That's Jim Hill. I feel that he can get a shot off quicker than I can. He spends most of his time observing the conditions at hand through his spotting scope. The length of time during which he leaves the scope and aligns his sights and releases the trigger, which is all routine, is very little. This time lapse may be shorter due to the fact that Jim does not hold off, but it is quite apparent, watching his cadence along with that of another well-known shooter, Bob Perkins, that they are very quick."

Defining concentration in shooting —: "I think concentration is more in ignoring the surrounding elements and focusing the attention on the conditions and work at hand with an interest in what you are doing more than trying to donate any specific amount of time to any particular operation. Some shooters might feel that when the proper concentration is observed, the shooter is in his own cloud and nothing will rattle him. This may be true, but I do admit that I use the groans and hollers from nearby shooters to do some of my doping."

It might be well to emphasize here that it is vital for a shooter to **know** his equipment. Bill maintains, "It is possible for a competitor with mediocre equipment to beat one with superior equipment, if the one with poorer equipment knows it thoroughly and understands its limitations." . . . We all remember when Bob Perkins was burning up the West and won the National Championship shooting an old broken-down 52. But, he knew his weapon, it performed for him, and he wouldn't have changed rifles for anything—until it finally wore out completely and had to be discarded . . . This is not to imply that you should not have the very best equipment that you can afford. Grater knows his equipment to the extent that he says, "The only time my gun goes sour, I am the one who has gone sour, not the rifle."

Having thoroughly explored Grater's winning combinations, both in actual shooting and equipment-wise, **preparation for a tournament** is a consideration which merits special attention. According to Bill, "It requires 3 major things—proper mental attitude, a good physical conditioning, and proper equipment. Taking the easiest of the three first, the equipment should consist of the rifle you intend to shoot in the tournament and a spare rifle with ammunition mated to each to give equal results. A shooter also should have all the adequate spare parts for any known emergency and the tools to correct the problem. He should have more than an adequate amount of ammunition, because he never knows when he may have to do some changing.

"The next item is a **physical conditioning**. I have been accused of shooting my best scores when I have been obese or just plain fat. I found that the secret in attaining good scores is not a certain type of physical exercise, but a complete and adequate conditioning of the muscles used in prone shooting. If you are to shoot 3-positional type shooting, I can definitely see an advantage in a specific sequence of exercises, because you use almost every muscle in your body to shoot the different positions. Consequently, a 3-position shooter should be in top physical shape, but he must be careful not to over-exercise or harden the muscles too much. . . The prone shooter need not do such an extreme amount of conditioning. He needs only to develop those muscles which he definitely uses to perform his shooting. I have fired tournaments when I have been in top notch physical condition due to exercises for basketball and football, but have noted that my scores were not as good as when I was less in condition. Since then, I have striven to hit a happy medium, whether I be fat or thin. I think that if a person has trouble holding a rifle for a long period of time, he should exercise his arms. A way to do this and still maybe have some fun at it would be to dry-fire . . . Unless you have a coach who can specifically tell you how and how much to use weights, I think they are a disadvantage. I find that 10 or 15 push-ups and 25 or 35 setups and some walking will help tremendously in physical conditioning, because it helps the muscles that you use and also the breathing. If you feel energetic, get out and play some sport in which you could work up a sweat and not get hurt. If you are a prone shooter, volley ball or tennis, badminton, etc., are good conditioners, yet still hold the interest. This will definitely aid you in your breathing. This is not for just the young shooters; it is for the older ones alike. The more you get out and move around and get fresh air, the better you'll feel.

"Regarding the last item in tournament preparation—proper **mental attitude**—I disagree with some top shooters in hashing over or shooting a match before you are there. If you are in a slump, you are beaten before you start, and you lose interest in what you are doing. Also, if it becomes such a chore that you have to think of your faults, either by diary or mental anticipation, the edge on your ability to concentrate on the firing line is not as sharp. This is where most shooters have a tendency to get mad at themselves for a mistake. In recent years I have found that unless you go to the tournament with a genuine interest in shooting, your scores suffer. If it is merely routine, you should be some place else . . . The best way I have found to combat this problem is to shoot in spurts—that is, only shoot enough to keep in shape, or 2 or 3 week-ends before a major tournament. I have done it both ways, and I personally find that if you shoot

year-round, you have a tendency to acquire bad habits which you cannot detect nor get rid of. The major mental attitude which is advantageous to any shooter is his feeling that when he goes on the line, he can beat anyone there.

"If a shooter encounters a long string of problems, a good way to discover what the problems are is by observation. When you are shooting good scores, have someone take a sequence of slides or motion pictures, and set them aside. When you encounter problems, have someone do the same thing again, and then analyze them. You may find that you are shooting a little lower, that you are not cheeking properly, or gripping the rifle a little differently, that something doesn't fit you properly, or many, many other things which you, yourself, cannot see."

In lieu of using a movie camera (per Bill's suggestion), my observation of him during much of his shooting career has been mentally catalogued. Despite his really spectacular shooting, his actual breakthrough did not materialize until April of 1963. Previously, Bill was his own toughest competitor. He defeated himself. Don't get the idea that he wasn't a winner! His record proves otherwise. He won aggregates, but "blew" tournaments which he should have won (in addition to those which he did win)—all because he exploded inside. In other words, he became angry with himself, his pulse rate increased, and he lost his usual control. Bill attained true maturity during the Int'l Prone Team tryouts. Leading at the end of the second and third days, he wasn't worried about a team spot. His hope was to stay on top of this cross section of the nation's top caliber riflemen. Even though Ed Summers pushed ahead of him on X's, Bill scored a terrific moral and psychological victory. By harnessing his emotions to an even keel, he accomplished much more than a temporary spark—this transition has already proven to be of permanent duration. He was a valued member of the Int'l Prone Team during its good-will shooting tour of Europe last summer.

Bill has been generous about sharing his knowledge and theories because he has a genuine desire to see the shooting game flourish. It is his hope (and ours) that other top flight shooters will avail themselves of this channel to divulge their theories in order to help others and, thus, improve our sport. Further, Bill feels that it is of the utmost importance to **preserve** the ideas which comprise each of these custom-made systems of techniques.

He is a great deal like his Dad as he advises, "Don't do as I do, but as I'm trying to tell you to do."

Which brings us to an interesting note—the last three National Smallbore Prone Champions were initiated into the shooting sport at a very early age by their fathers. The two more recent Nat'l title-holders were 26 when they triumphed, which is Grater's age. If the chain of events is to be continued, all signs point to this being Grater's year. National Junior Champion in 1955, a member of many Int'l Dewar Teams and of the 1960 Pershing Trophy Team, Bill has come within 4 places of the Open Championship. At this moment, he is undecided about competing at Perry. It is hoped that he will reconsider.

Bill voices the sentiments of a number of shooters when he offers the following suggestions for the improvement of the smallbore game—: he would like to see a new target adopted with a larger aiming point. The size of the rings could be left the same, but his personal preference "would be to compromise the size of the rings to the Int'l target, or go to it completely." The new standard target proved to be unpopular at the Fresno regional because of the thin rings . . . He would like

(Continued on Page Eight)

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Greater Precision in Prone Shooting

(Continued from Page Seven)

to see Rule 3.2 extended to embrace the Nationals, regionals, and sectionals so that shooters (and especially those who shoot International) could compete on that level with triggers to which they are accustomed . . . He feels that there is a need for ammo improvement. (Note: to my friends in the ammunition companies—watch ICI!) . . . He considers that a true National Championship should consist of a longer course of fire—the 6400-point aggregate which has been so successful in the West. . . . He suggests that the awards schedule at most tournaments contributes to a lack of incentive, and would like to see tournament sponsors consider the type of awards which the shooters prefer . . . He advocates that we all get behind the junior program with support and encouragement. Bill is undoubtedly recalling the fabulous exploits of the Brea (Calif.) Juniors, with whom he shot, and the Apaches of Phoenix. Hardly a senior team in the country could touch them . . . He urges that the matter of a covered firing line at Perry be considered. . . . Last, but certainly not least in importance, I join Bill in requesting, "Let's put prone shooters on International teams!" We were all disappointed that civilian prone shooters were not permitted to try out for this year's Olympic team. The Russian team is not limited to 10 shooters; therefore, you may consider this the opening fire of our campaign to field a larger, stronger team with fewer officials (if need be) at the 1968 Olympic Games!!!

(Note: I should like to clarify a few lines at the top of page 9 of last month's issue, which became transposed (along with the title). "The art in cutting solid wood versus laminated is that three major cuts are necessary, not one. The steps are (1) rough cut to shape, and then let it age and move for 30 to 60 days; (2) a second cut within 1/16 of size, which is allowed to age and move; (3) the final cut, within size, allowing enough for sanding and final fitting." . . . This is not a commercial and Grater had no intention of taking orders for stocks when he elaborated on his method of making them for himself. Following a request, via long distance, from an Eastern shooter, however, Bill has consented to make a stock on the condition that three other people place orders. The amount of claro walnut which he must obtain at a time makes it impractical to cut fewer than four stocks.)

BENET ARMS IMPORTS

By Kent Bellah

Benet Arms, 977 Filbert St., San Francisco, Calif., have a variety of fine Old World sporting arms. These include superposed combination guns with a shot tube over rifles in various small and big game calibers; side-by-side and O/U shotguns, and the superb new model Walther Olympia Rapid-Fire .22 Short match pistol. Write Benet Arms for literature and prices if you are interested.

Walther's name is a symbol of quality recognized by top shooters around the world. Their new Olympia Rapid-Fire (Olympia Schellfeuer Pistole) is stamped "Walther OSP" and "Carl Walther Waffenfabrik Ulm/Donau Cal. 22 short." That is, it's made in the Carl Walther factory in West Germany, established in 1886. The old model Walther match pistols have long been favorites of top shooters. Walther spent years in testing this new model before formal introduction, that probably started in 1961.

The new model was deliberately engineered for only one purpose, and that is to win matches. It complies with International Rules. The starting serial number was probably higher than 00001, and probably less than 1000 have been made to date. In September 1963 the serial number was



NEW WALTHER OLYMPIA RAPID-FIRE PISTOL

01000, and in June 1964 it was 01038, indicating some 38 weapons were made in 9 months. The new pistols were not designed for plinking tin cans. Still, they will do that job extremely well, and at low cost, except for the initial investment.

Walther Olympia Rapid-Fire pistols are not production pieces. They are put up in batches of about 20, with precision hand fitting. I can't find a component part that needs to be slicked up, tuned up or tightened up by a skilled pistol-smith. I can't find a single part that I think could be made better or fitted better, including the barrel. Nothing is sloppy or rough. Nothing is too tight, too loose, too long or too short. On that basis, the price is low. It isn't kissing kin to production arms, that are slipping so badly in quality in many well known makes these days.

The 5-round magazine is just forward of the trigger guard. One pistol had a 7½ ounce trigger. It's easily adjusted for a lighter or heavier pull. The let-off is superb, breaking clean as scored glass, with no "mush" whatever. Another outstanding feature is the superb Micro-Screw rear sight with extremely fine click adjustments. Windage and elevation screws are slotted, but adjustments can be made with the fingers. The sights hold perfect zero, and are non-recoiling. They have no "slop," free play, or looseness. The square front sight is fixed. Distance between sights is 11.0 inches.

Barrel length is 4.5". Weight, including the barrel weight, is 1150 grams, or 40½ ounces. This weight, and the balance, is just right for the advanced shooter. Every feature about the pistol is excellent; combined, the pistol is superb in every way.

The under side of the barrel has a dove tail slot for attaching the 3.5 ounce weight, held with two Allen screws. A novice may shoot better without the weight. He would do well to practice with it installed. Extra weight forward helps strengthen the wrist, it reduces muzzle jump, and the arm holds on target better, thus allowing more time for perfect sight alignment. Getting off 5 shots in 10 seconds Rapid-Fire is no problem, but perfect sight alignment for every round is a major problem. The pistol is designed for very accurate rapid fire. You have to shoot it to know how much it will improve your score and your speed!

Custom stocks are not needed. Equipment stocks are quality walnut, an excellent adjustable type with right hand thumb rest. Left hand stocks are \$15 extra. A large Allen screw adjusts the hand shelf,

making your hand almost part of the gun. They permit a perfect hold, with the trigger pull in a straight line. You can fire two or more magazines with no change whatever in your hold. A spare magazine, cleaning implements, and an Allen wrench are included, with a 25 meter test group in the German and English instruction books. The books have clear, detailed instructions and illustrations for stripping, trigger adjustment, etc.

Stripping is easy. A clever barrel locking lever holds the barrel perfectly. Reverse it and the barrel is readily withdrawn. With stocks removed the pistol can be machine rest fired. This is more useful for testing ammunitions, as the pistol holds the accuracy of the ammunition to an extremely high degree. As in all calibers, ammunition accuracy varies a bit from make to make and from lot to lot, from time to time.

The Walther Olympia Rapid-Fire shot beautifully with Western Super Match, a 1959 lot made for Fort Benning. Since that date R-P and W-W have greatly improved their standard velocity .22 Shorts. They about equalled this old lot, that must have been carefully loaded.

Before about December 1959 both major makes gave occasional misfires and indications of slow ignition. Despite improvements in both Hi-V and Lo-V types, an occasional misfire may occur with any rimfire ammunitions. The average is one in thousands of rounds, although two or more may occur in one box of cartridges. It's a fault we have had to live with since the rimfire cartridge was invented. I'm sure it was worse in the old days. In the early lots of non-corrosive priming the major cause was faulty priming compound that deteriorated in a few months of unfavorable (and sometimes favorable) storage.

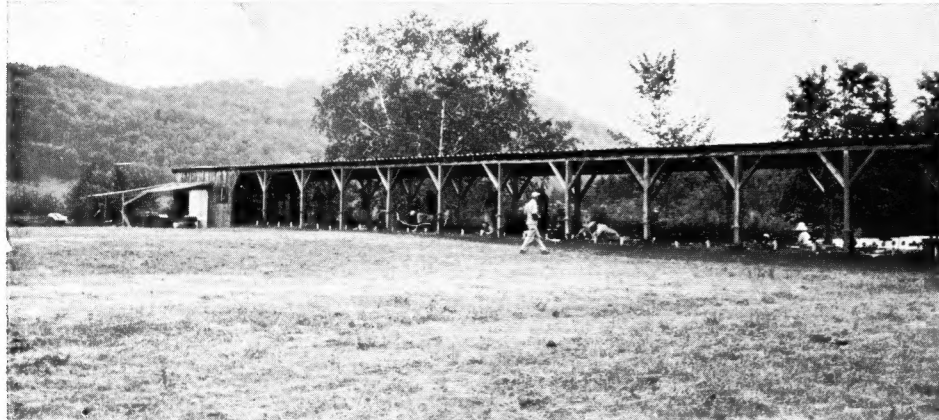
Today, the major cause is failure of the priming compound to fill the rim compartment all around. The next most common cause is, I believe, inadequate time in the vacuum drying ovens, resulting in a high moisture content in the priming compound. I believe correcting this latter fault is the major improvement in both popular makes of .22 Shorts.

These comments refer to ammunitions fired in quality arms. Many rimfire "snappers" are in circulation. These may be low priced arms that are poorly and cheaply made, or good ones that need repair or have a poorly designed firing pin. Some low priced arms, while a good value for the money, and for plinking, wear rap-

idly and become "snappers," although the rifling remains good for a long time.

We tried a HEGEwaffen Superposed President deLuxe, in a 20 gauge Magnum over a .222 Remington tube. This is a nice \$345 utility piece if you have a money tree in the back yard. The shot tube is chrome lined, and patterns well. The piece handles fast and well. The metal work, fit, finish and engraving are all you'd expect in this price range. The handle is quality French walnut, glossy finished, with attractive skip checkering. We wondered how the rifle tube on a hinged frame piece would perform.

A cast with Chamber Cast Metal indicated a precision chamber. Partly sized reloads for my personal Sako .222 Sporter would not chamber. We fired two groups of 5 shots at 100 yards with Federal ammunition, getting 1.2 and 1.5 MOA. With partly sized cases and 52 gr. Speer H. P.



The 45 point covered firing line on the Prosper Rifle and Pistol Club's smallbore rifle range, four miles north of Woodstock, Vermont, off Vt. Rt. 12. The range is on a shelf-flat high on the side of a narrow valley. Line of fire is toward the north. At the far end of the firing line is the scoring and statistical room. Hills in the background are on the opposite side of the valley. Two registered smallbore tournaments are fired on this range each summer; the Vermont State Championship in July and the Prosper Club Tournament late in August.

Random Shots

By Betty Summerall Duncan

Congratulating the forerunners who will uphold the tradition of the Olympic torch in Tokyo in the autumn—Capt. Tommy G. Pool, USA, of Groom, Texas, and 1/Lt. Lones W. Wigger, Jr., USA, Carter, Montana, for 3-positional smallbore; Lt. Gary L. Anderson, USA, Axtell, Nebraska, and Sgt. Martin I. Gunnarsson, USA, Sedalia, Colorado, at 300-meters—a simultaneous "well done" for those other fine shooters who came so close!

Indicative of the International strength which has shaped up since Cairo, we had a baker's dozen top-flight contenders, any one of whom could have delivered. Someone roughly estimated that 53 National Records were broken during the United States International Shooting Championships June 29-July 14, which constituted the final Olympic Trials, and the 4th Annual Inter-Service International Shooting Competition which preceded it, June 19-26. We haven't checked out the report, but some hot scores were fired at Fort Benning, Georgia, and the figure may not be exaggerated.

It would have been somewhat catastrophic had World Champion Gary Anderson not assumed his rightful position as head of the U. S. aggregation to the Olympic Games. It was good news, therefore, to learn that he earned his ticket with a 36-point leeway in the Nat'l Int'l Free Rifle 3-Position Championship (300-meters). The most outstanding phase of his 3440 to 3404 win over Gunnarsson was the 1160 Kneeling total. A pair of 386's plus a 388 (the World Record mark) add up to superior consistency at any shooting match. In hot, partly cloudy, reasonably calm condi-

bullets ahead of 20.2 grs. 4198 and CCI 400 primers two groups went 1.1 MOA, nice and round. The glass was a Weaver K-3. I'm sure groups would have been under a MOA if we had worked the charge up or down a bit and used a more powerful glass. The mount was a \$32 HEGEwaffen QD, attached to an integral base on the rib, with a positive dead stop. It holds zero and returns to zero.

This piece, and all other types of this make, are the creation of Friedrich Hebsaker, Jr., Master Gunmaker. The arms are made in a rapidly expanding modern plant. They are not completely hand made, but show evidence of much hand work. We haven't seen their O/U or side-by-side double barrel shotguns, or their lower priced rifle-shotgun combinations. Benet Arms literature shows some nice looking guns.

tions, he hit an even 1100 Standing and 1180 Prone . . . The high Standing score was Wigger's 1103, including a 378 new National Record score which erases Verle Wright's 376, which had equalled Hollenstein's World Record. Capt. Pres Kendall, with 1186, led in the Prone position. Behind Anderson and "Swede" Gunnarsson were: Wigger—3398; Pool—3397; M/Sgt. William E. Krilling—3395; Capt. Verle F. Wright, Jr.—3394; 1/Lt. John R. Foster—3390; Kendall—3390; and, High Civilian Daniel B. Puckel, Kingsport, Tenn.—3387.

Anderson paced the 300-meter postal team with an 1153, 3 points over the World Record, to shatter his own U. S. National Record by a point. Scores fired the 3rd day, July 6, counted for team. Krilling, Wigger, and Wright each turned in 1124, for a 4525 total. Alternate: Gunnarsson—1136.

Virginia Williams, Stamford, Conn., 1963 National Women's Bolt Rifle Champion and the first lady to fire the complete National Int'l course, upped her National Women's Record at 300-meters to 3184.

Philip D. Bahrman, Arlington, Va., undoubtedly claimed a National Junior Record with his 3204 score.

Backgrounds of the three protagonists in the International Smallbore 3-Position Championship have been significantly interrelated. Tommy Pool, the victor with an outstanding 3456 new National Record (Anderson's previous 1962 record was 3429), Creedmoored Pres Kendall for the National Smallbore Position Championship in 1962, on the basis of the higher standing score. Kendall was the 1962 National Smallbore Prone Champ (if any of you have tuned in late), and, in 1963 Lones Wigger, Jr., became the first man in his-

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tory to win both the Smallbore Prone and Position Championships . . . But, this time Kendall was involved with Wigger in an excruciating tie, as they reached the finish line with 3450 scores. Individually, it was exceptional shooting; collectively, it was too close for comfort . . . Ties may be resolved by one of several methods under ISU rules. In this instance, the jury decreed that a shoot-off over the half-course would determine the Olympic berth—which was, subsequently, reserved for Wigger, and Pres lost another tie-breaker. If any one there had cause for disillusionment, it was he.

Shooting achievements reflect little enough glory. Quadrennially, however, the status quo in this country is displaced: a new offensive is launched against the

(Continued on Page Fourteen)

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St. Louis 33, Missouri
Area Code 314 PA6-2109

NORTH CENTRAL REGION

Walt C. Siewert
Box 749
Custer, South Dakota

NORTHWEST REGION

Raymond Speer
925-7th St.
Lewiston, Idaho
Area Code 208 SH3-6135

SOUTHWEST REGION

John B. Sweany
4498 Silverado Trail N.
Calistoga, California 94515
WH2-6633

Secretary-Treasurer

Bernice E. McMullen
607 West Line St.
Minerva, Ohio 44657
Area Code 216 868-6132

NBRSA MEMBERSHIP DUES:

Individual annual dues \$5.00 (includes magazine subscription for membership term). Associate member (wife or husband, son or daughter under 18 years of age, of member in good standing—no magazine) \$2.50. Life membership, \$75.00. Annual club affiliation fee \$10.00.

PRESIDENT'S CORNER

I will try to bring you a day by day description of our Sporter and Varmint National Shoot, held in Abilene, Texas. I will skip over the highlights, as I feel the host club will fill these in on their reports.

I arrived in Abilene at 10:01 P. M. Sunday, August 1st, to be greeted at the airport by our director-elect ('64) of the Gulf Region, Pokey Bonner, who took me as a guest at his home for the remainder of the night. The next morning, after only a few hours sleep, I was eager to get to the range to help in any way I could.

Arriving at the range, I found the Club had improved the range to more than my expectations from my visit last January. Some misfortune had come their way several days before the shoot of some vandalism and thievery, by the loss of the Public Address system and regulation time clocks. Substitutes for these articles were hastily replaced. Loading benches were newly constructed and electricity placed conveniently for the incoming shooters' use. As the sun began to rise in the East, members of the range began arriving and eagerly began to check over anything not completed so we could be comfortable in everything.

NBRSA MEMBERS' QUESTIONNAIRE

- 1) Are you in favor of Ed McNally's (Best Five) proposal? (Yes —) (No —)
- 2) Do you feel the National Shoot dates should be set dates for each year? (Yes —) (No —)
- 3) Are you in favor of any rifle fired in the N. B. R. S. A. to have a butt stock, regardless of class? (Yes —) (No —)
- 4) Do you feel your Regional Directors are representing you at the National Meeting? (Yes —) (No —)
- 5) Are your Regional Directors answering your letters and questions? (Yes —) (No —)
- 6) Do you feel the President of the N. B. R. S. A. should hold office two years? (Yes —) (No —)
- 7) Do you feel sleeved actions should be allowed on guns under Heavy Varmint Class? (Yes —) (No —)
- 8) Are the clubs you are attending running Registered matches correctly? (Yes —) (No —)
- 9) Are the Range Masters running the shoots too fast for enjoyment? (Yes —) (No —)
- 10) Are you attending many shoots other than your home range? (Yes —) (No —)
- 11) Do you feel the Hunters class experimental matches have brought in new members? (Yes —) (No —)
- 12) Do you think the Hunters class would weaken the N. B. R. S. A. instead of strengthening it? (Yes —) (No —)
- 13) Are you in favor of a hunting rifle class? (Yes —) (No —)
- 14) Do you think the present Sporter class should require a magazine in the action? (Yes —) (No —)
- 15) Do you think the present Sporter rifle requirements should be changed to be like a hunting rifle? (Yes —) (No —)
- 16) Do you think a limit power should be on Sporter class? (Yes —) (No —)
- 17) Do you think 6 power should be the limit on Sporter class? (Yes —) (No —)
- 18) Do you think 8 power should be the limit on Sporter class? (Yes —) (No —)
- 19) Do you think 10 power should be the limit on Sporter class? (Yes —) (No —)
- 20) Do you propose the Light Varmint and Sporter classes should be combined? (Yes —) (No —)
- 21) Are you in favor of using two different calibers in one match or aggregate? (Yes —) (No —)
- 22) Should all Regions have equal bids for National matches? (Yes —) (No —)
- 23) Are all moving backers used on every registered shoot you attend? (Yes —) (No —)
- 24) Are you in favor of prize monies at registered shoots? (Yes —) (No —)
- 25) Do you feel a warm-up match should be required at all registered matches? (Yes —) (No —)
- 26) Are you in favor of National Matches for all classes being scheduled for one major trip each year? (Yes —) (No —)
- 27) Do you feel there are too many Regions in the West and not enough in the East? (Yes —) (No —)
- 28) Are you in favor of dividing into four Regions; thusly, N. E., S. E., S. W. and N. W. Regions? (Yes —) (No —)
- 29) Are you in favor of three Regions, thusly: Eastern Region; North Central, Mississippi Valley and Gulf Coast; Northwest, Southwest, Mid-Continent Combined, and each Region having one Director and two Deputy Directors? (Yes —) (No —)
- 30) Are you in favor of an Eastern and Western National Match scheduled on separate dates with National Champion decided by best aggregate from both sides—to save long-distances of travel? (Yes —) (No —)
- 31) Do you feel that Eastern and Western National Matches would bring more shooters to the National meets? (Yes —) (No —)
- 32) Do you feel the National Matches should be on one site, such as is done at Camp Perry? (Yes —) (No —)
- 33) Instead of disqualifications are you in favor of a shot fired outside of the black border be measured by adding ½ minute of angle at 100 yards and one minute of angle at 200 yards? (Yes —) (No —)

Name
Address

REGION

Mail completed form to:

A. W. Walter, President
1925 Raft Drive
Hanley Hills, St. Louis 33, Mo.

The red carpet was placed before everyone. Cars were presented to those who had no transportation, bus service was available from the motel to the range all hours of the day and night. Radio and TV covered the report of the shoot and interviewed all shooters. I had predicted there would be a large turnout and this prediction came true. Shooters came from as far as Connecticut and Washington. A total of 207 class matches were fired, 61 on Sporter, 71 on Light Varmint and 75 on Heavy Varmint. One record fell on a five shot group at 100 yards.

Weather conditions worked hardships on shooters not accustomed to the mirage and wind on this range. Baby twisters often went across the range and at one time removed a target from the target board, taking it through the air and beyond recovery. Disqualifications were accumulated by the dozens. The temperature ran from 95 degrees to 106 degrees, with humidity staying close to 25% and wind from 0 to 25 m.p.h.

As each shooter arrived at the range,

he was greeted by the host club and members visiting from other states. I was very happy to see so many shooters hastily getting to the firing line to try to dope the conditions that were waiting them. Many, including myself, found this practically impossible to do, but after three days of shooting we were beginning to tighten our groups by conquering the range.

The Varmint and Sporter matches are growing by leaps and bounds far beyond our expectations. The Club did an excellent job on operating the range with such a number of shooters, thereby forming 4 relays and having 20 benches, we were forced to fire the last two matches under lights. This was a new experience to some shooters who reported to me on how much they enjoyed night shooting. I feel this will introduce more night shoots in their areas; however, wind and mirage still took its toll in the darkness. As soon as a request was made to the host club they filled our request immediately.

All shooters were the guests of the West Texas Sportsman Club Saturday night

at a B-B-Q feast at their Clubhouse. As the shoot came to a close one could see a great winner called "FATIGUE" become the winner over all the shooters. To summarize this shoot, I feel safe in saying everyone who attended enjoyed themselves immensely, and to those who were unable to attend, I recommend that if this club ever holds another shoot, do not hesitate to try to attend.

The Range Master, Bob McLaren; Statistician, Pokey Bonner; the target detail and measuring committee; Dave Danielson, Secretary of the Club; and all who worked to see this match run in such an excellent manner, deserve a letter of thanks from all competitors.

After spending one week in the State of Texas I was placed on a plane by Mrs. Pokey Bonner and from complete fatigue slept like Rip Van Winkle until my arrival at the airport in St. Louis, where I greeted my wife and family.

I have asked each member to fill out the questionnaire which was published in PRECISION SHOOTING—to this date, August 12th, I have received 83 questionnaires, which is only about ten percent of our membership. I have put before you a chance for you to express your feelings, desires and suggestions other than the 33 questions presented to you. This will be the only time you will have this advantage during my office as President, and I plead with you to act accordingly. I have asked the members to remove this questionnaire from their magazine, which I now find was a drastic mistake, as over 70% of the answers I have received, the members refused this request and typed their answers on separate papers. Due to the fact that the members felt that they were destroying their magazine, I feel it is my duty to have this questionnaire reprinted in PRECISION SHOOTING for those who did remove same.

Our Directors, at my request, are meeting in Tulsa two days before the National Shoot date. I feel we will be able to accomplish more work during the day than after a day of shooting. Directors will be able to visit competitors in the evening instead of attending meetings and also be able to get proper rest, as other competitors do. The meeting will not be closed until the second from the last day of firing in case of unexpected business that might arise. Be sure to present to your Directors your requests so they may represent you. Any Director who will be unable to attend the meeting, I request him to send a representative with written proxy.

Until I see you on the firing line at Tulsa, may your destination be to the unrestricted matches where another Club anxiously awaits your visit.

Most sincerely,

A. W. Walter, Pres.
N. B. R. S. A.

NOTICE

ALL NBRSA EASTERN REGION MEMBERS

A meeting of the entire Eastern Region will be held at Johnstown, New York, at the Pine Tree Rifle Club Range at 7:00 P. M. E. D. S. T., on Saturday, September 5th, 1964 for the purpose of electing a Director for this region for a two year term commencing January 1st, 1965.

Immediately following and at about 7:30 P. M. E. D. S. T. a meeting of the Eastern Seaboard Division of the Eastern Region will be held for the purpose of electing a Deputy Director, whose term shall commence January 1st, 1965.

Both of said meetings shall also consider any and all matters as may be properly brought before them.

Brunon V. Boroszewski
Director NBRSA Eastern Region

NATIONAL VARMINT AND SPORTER CLASS CHAMPIONSHIPS

Official results as reported by J. L. Bonner

Tom Gillman, Hot Springs, Arkansas, was the outstanding shooter in the 1964 National Championship Matches for Varmint and Sporter Classes, fired on the West Texas Sportsman Club range at Abilene, Texas, August 7th, 8th and 9th. Gillman won the Light Varmint class championship and possession of the San Angelo Cup Trophy on Saturday (Aug. 8th). The final day, Sunday, he won the Heavy Varmint class championship and the Gun Digest Trophy. He had been fifth ranking shooter in the Sporter class matches on Friday and his combined aggregates made him winner of the over-all three-class aggregate and he was presented the Field & Stream Trophy by Field & Stream Shooting editor, Warren Page.

Dr. Sam Nadler, New Orleans, Louisiana, defeated the 1963 champ, Dave Hall from Warsaw, New York, to become the 1964 Sporter Rifle Champions and winner of the John I. Moore Trophy. Dr. Nadler ranked third in the Heavy Varmint class aggregate and was runner-up in the over-all three-class aggregate.

Following are the day-by-day and class-by-class statistics:

SPORTER RIFLE (fired August 7th)

100 Yard Match Winners

Warm-Up;	Henry Moore, Texas	.360
Match #1	A. C. Glover, N. Y.	.302
Match #2	Dr. Sam Nadler, La.	.233
Match #3	Dr. Nadler	.306
Match #4	R. R. Saylor, N. Mex.	.334
Match #5	Dr. Nadler	.428

100 Yard Aggregate

Dr. Sam Nadler	.439
R. R. Saylor	.527
H. Shipley, N. Mex.	.534
I. F. Williams, Ariz.	.565

200 Yard Match Winners

Warm-Up;	A. Daugherty, N. Mex.	.975
Match #1	P. Horowitz, N. J.	.558
Match #2	Dr. Sam Nadler	.686
Match #3	A. Daugherty	.918
Match #4	P. Horowitz	.529
Match #5	H. B. Reagan, Tex.	.622

200 Yard Aggregate

P. Horowitz	.586
Dave Hall, N. Y.	.629
A. Daugherty	.692
Dr. Sam Nadler	.715

CHAMPIONSHIP AGGREGATE TOP-TEN

Dr. Sam Nadler	(MOA)	.577
Dave Hall		.623
P. Horowitz		.649
L. E. Wilson, Wash.		.660
Tom Gillman, Ark.		.679
I. F. Williams		.687
L. E. Cornelison, Okla.		.688
P. Rollins, Mich.		.690
Warren Page, N. Y.		.699
A. Daugherty		.703

Before beginning the Sporter Class, the Abilene club held the initial shoot for a three-shot cold barrel match known as the David Crockett Match. Mr. John I. Moore of San Angelo, Texas is giving to the N. B. R. S. A. a permanent trophy to be called the David Crockett Trophy and each year at the Nationals this match will be fired from a cold barrel sporter rifle immediately preceding the opening match. This is a three-shot match measured for group size and in the event of a tie it shall be broken by the group nearest the center of the target. Winner of the Trophy this year was Mr. Frank Muriel of St. Louis, Mo., with a .274 fired from 100 yards.

On behalf of the N. B. R. S. A. we wish to express our appreciation and sincere thanks for this new trophy, and gratefully accept it from Mr. Moore, who has contributed so much to our organization.

LIGHT VARMINT (Fired August 8th)

100 Yard Match Winners

Warm-Up;	H. Campau, Mich.	.311
Match #1	H. Spencer, Tex.	.367
Match #2	Al Walter, Mo.	.409
Match #3	Tom Gillman, Ark.	.199
Match #4	H. Campau	.236
Match #5	J. D. Richardson, Tex.	.153

100 Yard Aggregate

Tom Gillman	.386
Al Walter	.419
Dr. Sam Nadler	.452
L. Beard, Ark.	.463

200 Yard Matches

Warm-Up;	F. Muriel, Mo.	.675
Match #1	P. Rollins, Mich.	.519
Match #2	B. Summers, Tex.	.762
Match #3	J. D. Richardson	.757
Match #4	Tom Gillman	.861
Match #5	Q. Stanley, Tex.	.964

200 Yard Aggregate

Tom Gillman	(MOA)	.670
F. Muriel		.679
Al Walter		.691
Warren Page, N. Y.		.694

CHAMPIONSHIP AGGREGATE TOP-TEN

Tom Gillman, Ark.	(MOA)	.528
Al Walter, Mo.		.555
Ralph Saylor, N. Mex.		.610
Larry Beard, Ark.		.616
Frank Muriel, Mo.		.654
Peter Horowitz, N. J.		.696
Warren Page, N. Y.		.6973
L. E. Wilson, Wash.		.6975
Henry Moore, Tex.		.713
Paul Gottschall, Ohio		.715

HEAVY VARMINT (Fired August 9th)

100 Yard Match Winners

Warm-Up;	H. Campau, Mich.	.257
Match #1	Dr. Sam Nadler, La.	.177
Match #2	Dr. A. C. Glover, N. Y.	.204
Match #3	Dr. H. W. Ward, Tex.	.290
Match #4	P. Gottschall, Ohio	.317
Match #5	C. A. Morris, Tex.	.178

100 Yard Aggregate

Dr. Sam Nadler	.326
Tom Gillman	.372
Larry Beard, Ark.	.392
Al Walter, Mo.	.425

200 Yard Match Winners

Warm-up;	H. Campau	.566
Match #1	Al Walter	.554
Match #2	Dr. L. Nollkamper	.464
Match #3	C. Pickard	.491
Match #4	H. Powers, Okla.	.400
Match #5	H. Powers	.434

200 Yard Aggregate

H. Powers	(MOA)	.366
Tom Gillman		.392
Larry Beard		.415
W. Conrey, Tex.		.435

CHAMPIONSHIP AGGREGATE TOP-TEN

Tom Gillman, Ark.	(MOA)	.382
Larry Beard, Ark.		.404
Dr. Sam Nadler, La.		.416
Al Walter, Mo.		.469
I. F. Williams, Ariz.		.4701
Paul Gottschall, Ohio		.4704
L. E. Cornelison, Okla.		.481
Harold Campau, Mich.		.484
A. J. Freund, Mo.		.491
E. L. Thompson		.500

THREE-GUN ALL-AROUND AGGREGATE TOP-TEN

Tom Gillman, Ark.	(MOA)	.5299
Dr. Sam Nadler, La.		.5709
Peter Horowitz, N. J.		.6260
Paul Gottschall, Ohio		.6301
L. E. Cornelison, Okla.		.6532
Warren Page, N. Y.		.6617
Al Walter, Mo.		.6646
Dave Hall, N. Y.		.6863
Henry Moore, Tex.		.7007
Harold Campau, Mich.		.7218

(Continued on Page Twelve)

National Varmint and Sporter Class

(Continued from Page Eleven)

The shooting conditions were about average for this time of year and this section of the nation. We had 100 plus temperatures with wind from 0 to 25 MPH and some high broken cloudiness, occasionally a West Texas whirlwind which played havoc with some groups, as proven by the numbers of disqualifications in the Light Varmint class. There were 9 shooters in Sporter class, 28 in Light Varmint and 21 in Heavy Varmint who disqualified.

The attendance at the Nationals this year broke all records as there were 54 in Sporter class, 74 in Light Varmint and 75 in Heavy Varmint class.

The Gulf Coast Region, Texas Bench Rest Shooters Ass'n, and the West Texas Sportsman Club wish to thank each of you for coming to this National and ask that you forgive us for any mistakes that were made as they were not intentional. We also wish to ask the members of N.B.R.S.A. to give the host region in 1965 even more support and attendance than was here in Abilene this year.

We had one new member, Mike Carpenter, an eleven-year-old from San Antonio, Texas, come up and compete in all classes. Mike came out with a 3-gun aggregate of 9431 which was a lot more than some of the rest of us could do. Congratulations Mike.

John D. Richardson of Abilene fired a 100 yard five-shot group of .153 inch which is now pending for a new Light Varmint record.

(P. S. Editor's note: The foregoing information and statistics reached us from J. L. Bonner, the shoot statistician, barely before issue closing time, as did Al Walter's "President's Corner" with some additional comment on the matches. Photos and further information, especially equipment data, will be compiled after we receive the official bulletins and presented in the October magazine.)

1964 BENCH REST MATCHES

EASTERN REGION

Fassett, Pa.: October 3 and 4; Pennsylvania State Championship Varmint and Sporter (a change of date); South Creek Rod & Gun Club, c/o Gerald Arnold, R. D. 1, Gillett, Pa.
Augusta, Ohio: September 12 and 13, Unrestricted rifle, night shoot. Reed's Run Rifle Range, Box 66, Augusta, Ohio.

Johnstown, New York: Sept. 5 and 6; (Unrestricted, Heavy and Light Varmint, Sporter classes) Pine Tree Rifle Club, Inc., c/o Edward J. Sweeney, 501 North Market St., Johnstown, New York.

MISSISSIPPI VALLEY REGION

St. Louis, Missouri: Oct. 3 (Sporter—twilight). Bench Rest Rifle Club of St. Louis, c/o Arthur J. Freund, 1038 Hornsby Ave., St. Louis, Mo. 63147.

MID-CONTINENT REGION

Hot Springs, Arkansas: Sept. 5 (all classes). Hot Springs Gun Club, B. J. Maddox, Sec'y, 110 Pinewood, Hot Springs, Arkansas.
Kansas City, Kansas: Sept. 26 (night—H. Var.—non reg.); Oct. 17 (night—unrestricted). Mill Creek Rifle Club, L. F. Carden, Sec'y, 5022 Waverly, Kansas City, Kansas.

Tulsa, Oklahoma: Sept. 16-17-18-19 (Unrestricted National Championship). Tulsa Bench Rest Rifle Club, R. G. Berry, Sec'y, Pawnee, Oklahoma.
Wichita, Kansas: Oct. 3 (night—unrestricted). Wichita Bench Rest Rifle Club, c/o Maj. Richard Hornbeck, Pres., 1640 Windsor, Wichita, Kansas 67218.

NORTH CENTRAL REGION

Buffalo, Wyoming: Sept. 27th, Hunters match. Buffalo Outdoor Rifle Club, C. C. Hankins, Sec'y, P. O. Box 151, Buffalo, Wyoming.
Iowa Falls, Iowa: Sept. 19 (Var.—nite), Sept. 20 (Spt.—day). Iowa Falls Gun Club, Lee R. Boddy, Sec'y, Iowa Falls, Iowa.

NORTHWEST REGION

Seattle, Washington: Nov. 22, Turkey Shoot. Puget Sound Benchrest Rifle Club, M. M. Oakley, Sec'y, 7230 So. 116th, Seattle, Wash. 98178.

SOUTHWEST REGION

Yreka, California: Sept. 5 and 6, Third Annual West Coast Championship, four classes (reg.) Yreka Rifle Club, Ray E. Jones, 508 Knapp St., Yreka, California.

Modesto, California: Oct. 10-11; Southwest Regional Championships; Modesto Rifle Club, c/o Duane D. Jenner, 1944 Ealston Court, Modesto, California.

EASTERN MATCH DATE CHANGES

The Pennsylvania State Championship Matches for Varmint and Sporter class at South Creek Rod & Gun Club, Fassett, Pa., originally scheduled for September 12th and 13th, have been changed to October 3rd and 4th.

Dates of September 12th and 13th have been awarded to Reed's Run Rifle Range, Augusta, Ohio, for a night shoot for Unrestricted Rifle class.

NEW BENCHREST RANGE IN NORTH DAKOTA

Fargo, No. Dak. member Ralph Yaeger reports a new benchrest range in North Dakota, as follows:

"In another year we will have an up to date benchrest range at Cooperstown, No. Dak., which is about 100 miles northwest from Fargo. We tried it out on the 28th of June and had a pretty good turnout. Due to the weatherman handing us a dilly of a fishtail the aggregates were not too small but it was a good shoot because lady luck smiled on a lot of winners instead of just a few.

"This new range is being built by Mr. Edwin Reiton of Cooperstown. Ed has been in the shooting game for a long time and took up the benchrest game a few years ago. He is a life member of the Association and is putting a lot of hard work and money into this enterprise. I surely hope he gets the cooperation he so rightly deserves."

Bench Rest Match Reports

HOT SPRINGS, ARKANSAS

A Heavy Varmint and Sporter was held by the Hot Springs Gun Club the night of June 27th. Shooting conditions were ideal and the small aggregates posted by the heavy varmint shooters reflect them. The first three places all finished with grand aggregates under .400 MOA.

Tom Gillman shot what may be a small group record at 200 yards. The range measurement was .200 inch. Red Cornelison of the Tulsa Gun Club shot a .150 inch group at 100 yards which is also on the skimpy side.

The sporter class didn't fare so well, with no really outstanding aggregates being posted. However, Tom Gillman's grand aggregate was a respectable .610 to take first place.

The top aggregates were:

	Heavy Varmint		
	100	200	Grand
Tom Gillman	.3066	.3676	.3371
Larry Beard	.3653	.3766	.3659
Allan Hall	.8228	.5424	.6826

	Sporter		
	100	200	Grand
Tom Gillman	.7951	.5010	.6300
A. H. McDonald	.704	.916	.810
B. J. Maddox		1.264	

I don't know if many clubs around the country are having night matches, but here in Hot Springs we have found them to be quite popular with the shooters. It gives us considerable relief from the weather which has been 100 plus degrees lately (written July 14th) and we generally find that shooting conditions are much better. It probably requires less skill on the shooter's part, but it is a real test of his equipment, and quickly shows if your shootin' iron is "sick" or "sharp." We feel that only under ideal conditions is it possible to really force the very last measure of accuracy from the gun.

Bob Maddox

LEWISTON, IDAHO

At 1:45 A. M., July 5th, 1964, winners of the 1964 Speer Matches were awarded their trophies. Surely this must be a first in the history of benchrest competition! Looking at the score sheet it is

readily apparent that a great deal of Idaho silver was transferred to Kansas via L. F. "Bud" Carden and Walt Berger who traveled 1800 miles to participate in the second annual 4th of July matches. It was a real pleasure and a generous compliment for these nice guys to make the trip and we appreciate their efforts, along with everyone else who journeyed so many miles to take part. Although the turnout was smaller than a year ago, everyone seemed to enjoy themselves and shooting conditions (scores too) were better than 1963.

We wish to particularly thank Fred Huntington, John Sweany, and Roy Norman for their generosity in supplying us with gifts for prizes. Judy Styskal and Jerry Bean received travel alarm clocks donated by Roy. Manley Oakley received the Sweeney Site-A-Line given by John. Judy Styskal, Len Shepherd and Al Bench received an RCBS powder measure and powder tricklers with the compliments of Fred.

The top aggregates were:

UNRESTRICTED "OPEN" CLASS—100 yards; L. F. Carden .2910; Manley Oakley .2988; Walter Berger .3410. 200 yards; Carden .4598; L. E. Wilson .5121; Roy Norman .5552. Grand Agg.—Carden .3754; Norman .4599; Berger .4710; and Al Bench .4852.

UNRESTRICTED "LIMITED" CLASS—100 yards; L. F. Carden .2790; Roy Norman .3342; Walter Berger .3482. 200 yards; Carden .3665; Ray Speer .4630; Norman .4641. Grand Agg.—Carden .3227; Norman .3991; Berger .4394; Speer .4425.

HEAVY VARMINT CLASS—100 yards; Al Bench .3954; L. E. Wilson .4672; Dale Strawn .4722. 200 yards; L. E. Wilson .5597; Roy Norman .5628; Al Bench .6418. Grand Agg.—Wilson .5135; Bench .5186; Norman .5225.

LIGHT VARMINT CLASS: 100 yards; Manley Oakley .5232; L. E. Wilson .6230; Wayne Davidson .6250. 200 yards; Wilson .7401; Dale Strawn .7996; Davidson .8011. Grand Agg.—Wilson .6816; Davidson .7131; Al Bench .7222; Dale Strawn .7590.

Reported by Ray Speer

WICHITA, KANSAS

The Annual Kansas State Championship matches held the 4th and 5th of July 1964 had a good turnout, and for the conditions, good groups were turned in. There were 10 shooters in the Sporter class, 20 shooters in the Heavy Varmint class and 18 shooters in the Unrestricted class.

The weather was clear, warm and very windy. The 4th, Saturday, had winds 18 to 25 mph with gusts to 26. Sunday, the 5th, the wind really got going and during the afternoon gusts to 36 mph were experienced.

Several shooters were in their first match. Jean Tippitt, Ralph Lott and Don McCoy joined us, and did a real good job. They, along with the "old Timers" helped make this one of the most successful shoots the Wichita Bench Rest Rifle Club, which conducted the matches, has ever had.

SPORTER CLASS: Bob Stultz took first place in the sporter class. He was shooting a 6mm Int. on a Sako action and Hart barrel. He used a 25X Lyman scope and his load was 31 grs. 7122, Sierra 75 gr. HP bullet and Win. primers. His gun was a 9 3/4 lb. rig. The top aggregates were:

	200	100	Grand
Bob Stultz	.8959	.6050	.7504
Tom Gillman	.8186	.8494	.8340
James Malir	.8355	.8460	.8407
Tom Wiggins		.7632	

Gillman took small group trophy at both 100 and 200 yards with .392" and .764".

HEAVY VARMINT CLASS: Tom Gillman did his usual good shooting and walked off with top honors. He was shooting his own 22 wildcat on his own action with a Hart barrel. His load was 2815

grs. 4320, Sierra 53 gr. HP bullets and Rem. primers. His gun was a 13.7 lb. rig. Top aggregates were:

	200	100	Grand
Tom Gillman	.545	.694	.610
Allen Hall			.3842
Larry Beard	.9039	.4714	.6876
Red Cornelison	.9272	.5700	.7486
A. G. Rogers	.8560	.5632	.7096

Nolan Rammage shot small group at 100 yds. (.166") and Frank Muriel at 200 yds. (.733").

UNRESTRICTED CLASS: Bob Stultz came back to shoot in the unrestricted class and took top honors. Dixon Herman, who was second, gave him a good run and was robbed of top honors because of backer trouble caused by the wind. Bob was shooting a .222 on an FN action with a Hart barrel. His load was 24.5 grs. H335, 53 gr. Sierra bullets and RWS primers. Top aggregates were:

	200	100	Grand
Bob Stultz	.5252	.4010	.4631
Dixon Herman	.4758	.4806	.4782
Horace Powers	.5419	.4782	.5100
Bill Coleman	.5415	.5548	.5480
N. C. Jackson	.6447	.4596	.5521

Bernard Geenens had small group at 100 yds. (.300") and Bill Coleman at 200 yds. (.653").

Rick Hornbeck
(Editor's note: You will note that all aggregate winners shot Sierra bullets. More outstanding for Sierra is the fact that 4 of the top 5 in Sporter class; 4 of top 5 in Heavy Varmint; and 3 of top 5 in Unrestricted class shot Sierra bullets. In Heavy Varmint class, 10 of the 20 shot Sierra bullets and 1 shot Speer 52 gr. bullets.)

FASSETT, PENNSYLVANIA

Two NBRSA records may have been broken in the July 12th Varmint and Sporter shoot at the South Creek Rod & Gun Club, Fassett, Penna.

Mr. Lynn Hunt of Rock Stream, New York, shot a Heavy Varmint class 100 yard aggregate of .2186. His groups were .241, .259, .200, .176 and .217. Mr. Hunt is one of those quiet fellows who never says too much but when he attends a match everyone knows he is there if they ever look at the score sheet.

In the Sporter class, Dave Hall, another quiet fellow, did exactly the same thing and with the exception of his last group would have put the Sporter 100 yard aggregate out of reach of everyone for some time. His groups were .344, .216, .381, .324 and .637. In the last match at 100 yards the wind was blowing real hard and that .637 that Dave shot could very easily have been one inch larger, as most of them were on his relay.

The first thing in the morning the conditions were ideal but as the day progressed they continually got worse. At the end of the day conditions were real bad, as some of the large aggregates indicate.

It was another large shoot for the South Creek Club, with 35 shooters participating. In three shoots this year the South Creek Club has played host to 159 competitors, and there are two shoots still remaining for this season.

The top ranking aggregates were:

SPORTER CLASS

	100	200	Grand
Dave Hall	.3804	.6101	.4952
Paul Kempfer	.5614	.5508	.5561
Arthur Glover	.7206	.8692	.7949
C. Detsch	.8000	.9611	.8299
R. Hall	.6916	1.2571	.9743

LIGHT VARMINT CLASS

A. Glover	.5728	.6754	.6241
R. Hall	.7714	.9334	.8524
Clifton Carr	.8522	1.0209	.9365

HEAVY VARMINT CLASS

Ross Sherman	.3720	.4864	.4292
Dave Hall	.4348	.4472	.4410
Harry Bente	.4320	.4888	.4604
Lynn Hunt	.2186	.7072	.4629
Jerry Arnold	.3516	.5791	.4653
Gerald Arnold			

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BUFFALO, WYOMING

Fifteen shooters from Calif. (2), Colorado (4), Montana (1), South Dakota (3), Washington (1) and Wyoming (4) participated in the annual Mid-Summer registered shoot at Buffalo, Wyo. on July 11 and 12.

(Editor's note: Usually, at this shoot, the Varmint class matches are fired in the afternoon and the Unrestricted class matches at night under lights. We presume that to have been the case this year.)

The top ranking aggregates were:

HEAVY VARMINT CLASS: 100 yards

—Bruce Pheasant, Buffalo, Wyo. .3926; L. E. Wilson, Cashmere, Wash. .4245; Harold Bing, Newcastle, Wyo. .4714. 200 yards—Wilson .4544; Bing .5515; Clair Hollingsworth, Rapid City, So. Dak. .6118. Grand Agg.—Wilson .4394; Pheasant .5051; Bing .5114.

UNRESTRICTED BENCH RIFLE:

100 yards—L. E. Wilson .2720; Clair Hollingsworth .2788; Bob Junk, Colorado Springs, Colo. .3412. 200 yards—Wilson .3232; Junk .3515; Hollingsworth .3945. Grand Agg.—Wilson .2976; C. Hollingsworth .3366; Bob Junk .3463.

Wilson shot .222 cal. in both classes at this shoot—Hart barrel on Rem. 722 action for Unrestricted and Hart barrel on 40X action for Heavy Varmint. His load for both rifles was 25 grs. Ball powder and his own 59 gr. bullets with Rem. primers. Except for C. S. Pool, who shot a 6mm HLS in Varmint class, all competitors shot .22 cal. rifles in both classes. Six shot Sierra bullets, one of whom was runner-up in the Varmint grand agg.

CANTON, OHIO

Twenty-one shooters participated in one or both of the two 200 yard matches for Varmint rifles at the Canton-McKinley Rifle Club on July 18th. It would appear that the first match was shot in the afternoon and the second match in the evening under lights. Conditions are reported to have been perfect for the second match. These Canton-McKinley shoots are drawing competitors from a widening circle; Dave Hall from Warswa, N. Y. and Dr. Fulmer from East Syracuse, N. Y. were competing at this shoot.

It took possible 50 scores to win any of the 5-shot matches, but 4x possibles won two of the afternoon matches. In the evening it took 5x possibles to place 2nd or even 3rd, and in the final 5-shot match all top five places went to 5x possibles with the ranking decided by group measurement. The high ranking aggregates were:

AFTERNOON MATCHES

	Score	Group
Paul Gottschall	250-21x	.4577
Lawrence Rucker	250-18x	.5696
Omar Rinehart	250-18x	.5887
Young	249-11x	.8453
Harold Campau	248-13x	.7043

EVENING MATCHES

Omar Rinehart	250-25x	.3208
Dr. Fulmer	250-23x	.3282
Paul Gottschall	250-22x	.2905
R. Snell	250-19x	.4846
Harold Campau	250-19x	.5072

TULSA, OKLAHOMA

Twenty-one shooters competed (three with heavy bench guns and eighteen in Heavy Varmint class) in the night shoot sponsored by the Tulsa Benchrest Rifle Club on July 18th. Shooting conditions are reported to have been just about as

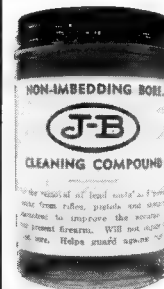
(Continued on Page Fourteen)

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Bench Rest Match Reports

(Continued from Page Thirteen)

perfect as could ever be hoped for and some very small aggregates were made, especially at 200 yards, two of which have been submitted for judging as new records; these in Heavy Varmint class. Art Day of the host club was the best of the three shooting unrestricted bench guns and aggregated .416 at 100 yds., .3693 at 200 and .3877 for the NMC.

Top ranking Varmint class aggregates were:

	100	200	Grand
Larry Beard	.3168	.3655	.3412
Tom Gillman	.4004	.3051	.3528
Red Cornelison	.3514	.3871	.3723
Joan Morgan	.3692	.4119	.3901
Allan Hall	.4534	.3270	.3902

CALIFORNIA STATE CHAMPIONSHIPS

A record entry (30 shooters) for a registered bench rest match on the Richmond Rod and Gun Club range competed in the California State Championships on July 25th and 26th. Chester Pluth, Lakeport, Calif. won his fifth consecutive Unrestricted Open Class championship by an impressive margin. Wallace Titus, Lewiston, Idaho won the Unrestricted Limited Class championship; Ed Suchan, Oakland, Calif. took the Heavy Varmint championship; and Dale Strawn, Oroville, Calif. (RCBS) was the winner of the Light Varmint championship.

The top aggregates in the various classes were:

UNRESTRICTED OPEN CLASS

	100	200	Grand
Chester Pluth	.2712	.2964	.2838
Henry Smith	.3469	.3796	.3632
Ray Jones	.3268	.4263	.3765
Felix Marincovich	.3072		

UNRESTRICTED LIMITED CLASS

	100	200	Grand
Wallace Titus	.4444	.5003	.4724
Raymond Speer	.4516	.5614	.5065
Virginia Jones	.4746	.6366	.5566
Henry Smith	.3064		

HEAVY VARMINT CLASS

	100	200	Grand
Ed Suchan	.4252	.4462	.4377
Ray Jones	.3862	.4963	.4463
L. C. Puett	.4698	.5025	.4862
Tom Squires	.3758		
Jack Broome	.4206		

Jack Bridwell	.4534		
Joe McPhillips	.4959		

LIGHT VARMINT CLASS

	100	200	Grand
Dale Strawn	.4826	.5388	.5107
Allen Bench	.4338	.5884	.5111
Ray Jones	.5358	.5533	.5445

In Unrestricted Limited class, Henry Smith did not shoot the 200 yard matches. Thirteen-year old Rod Bench had over an inch group in his first match at 100 yards but his following four groups were of the same quality as his 200 yard groups.

In Heavy Varmint class, Tom Squires did not shoot the first match at 200 yards but for the following four matches he averaged .493 MOA. Jack Broome did not shoot any of the 200 yard matches.

Equipment-wise, for the 15 individuals who won one or more aggregate awards:

CALIBERS: One used .219 Don. All others used 222 or 222 Magnum. Pluth used 222, Suchan the .219 Don, Titus and Strawn used 222 Magnum.

BARRELS: Dale Strawn used a Holmes barrel, Rod Bench a Douglas and Jack Broome a Remington 40-x. All others used Hart barrels.

BULLETS: Seven shot hand-made bullets, five shot Sierra 53 gr. HP bullets and three shot Speer 52 gr. HP bullets. Titus, Ray Speer and Strawn shot the Speer bullets. Smith, Ray and Virginia Jones, Squires and Broome shot the Sierra bullets.

KANSAS CITY, KANSAS

Mill Creek Rifle Club held its second open bench match August 1st with 12 shooters competing. At these late afternoon-night matches, shooting starts as near 4 P. M. as possible which usually permits

shooting the 100 yard matches before dark, then eat supper and move target frames at dusk. At this match, the first 4 100 yard matches were fired before dark. Conditions are reported to have been "clear and hot with fish-tail wind all afternoon and evening."

The aggregate award winners were:

	100	200	Grand
"Bud" Carden	.294	.3275	.3107
Horace Powers	.395	.417	.4060
Bernard Geensens	.375	.447	.4110
John Mayer		.386	.4115
Bob Stultz		.442	.4255
Dixon Herman	.399		
Walt Berger	.405		

Carden shot small group (.240) at 100 yards and Mayer the small group (.520) at 200 yards.

Equipment-wise; seven shot the 222 Rem., one the 222 Rem. Mag., one the 222½, two the .219 Don and two a shortened 222 Swift case. Ten used Hart barrels, two the A. L. Day barrels and one a Douglas barrel. Twelve used hand-swaged bullets and one (Bob Stultz) the Sierra 53 gr. H. P. Nine used RWS primers, two Federal and two Remington.

Random Shots

(Continued from Page Nine)

boys with the Potomac jerseys as an all-out effort is made to recover the (governmental) ball, Leap Year fever is prevalent, and a limited number of shooters rise from comparative obscurity into the world-wide spotlight. For this supreme honor—the opportunity of representing all of the shooters of the United States versus the champions of the world—the foremost contenders have tempered their lives and their skills in preparation, ready to accept the responsibility equally with the laurel-wreath.

Obviously, Wigger and Kendall were evenly matched. Their kneeling totals were identical—1159. While Wigger had the edge Standing—1112 to 1103—Kendall compensated with an 1188 to 1179 Prone lead. Wigger's 1158 first day's 3-position score now appears in the National Record book, exceeding Anderson's 1157 World Record and former National Record. Pool and Kendall had the high individual Kneeling scores of 390, in which position Pool also excelled aggregate-wise with 1162.

Scoring 3445 for fourth place was 1/Lt. Eugene L. Kolstad, who with Lt. James K. Frazer posted the second high Kneeling scores of 1160. Anderson's 5th place 3438 included outstanding 399 and 398 Prone targets, and the best 1192 Prone aggregate.

Up to this point, an All-Army line-up has accounted for the action as USA MTU competitors monopolized the rifle events. Sgt. David I. Boyd, Pan-Am Team member, "saved face" for the Marine Corps as he slipped into 6th place with 3431. Clustered behind him with a pair of 3430's were Bill Krilling and Jack Foster . . . Among the 54 competitors, including 17 civilians, there seemed to be an unusually wide range of scores.

We've been hearing some fantastic rumors about a young civilian shooter from East Lansdowne, Pa. High Olympic try-out performance should convince the most dubious Missourian, and we have concluded that the reports on James J. McHugh have only partially done him justice. No one even approached him in the Standing position, where his lowest score was 370. Only two other shooters fired more than one score in the 370's—Wigger and Kendall with two each, while McHugh had three such scores. He started out with 375 Offhand, a point shy of Anderson's National and World Records. On his second attempt, his 379 surpassed it with a clearance and gave him the new National Record! This all adds up to an 1124 new Record score, the closest man to him being Wigger with 1112. Jim's 3428 Aggregate was good for High Civilian and 9th place

over the field, trailed by Gunnarsson's 3420 . . . The way I see it, that is terrific shooting. As one of McHugh's friends declared, "Just wait until 1968!" This was the same friend who tells about McHugh's having beaten him with his own rifle, a left-hander, and Jim is right-handed . . . More than a year ago we tossed out a hint that some institution of higher learning with a strong rifle team might acquire McHugh if they offered a sensible scholarship, for he has two serious aspirations—getting an education and shooting. In order to accomplish both, he hitchhikes to matches, riding to Benning with Gary Anderson. Perhaps the opportunity to shoot means just a little more to him!

Second Civilian was John H. Writer, LaGrange, Ill., with a very fine 13th place 3405, who was also second to Puckel at 300-meters in the civilian category. At 50-meters, Barry R. Trew, Bentleyville, Pa., placed 3rd civilian, shooting 3388.

Philip Bahrman led 3 other juniors with a creditable 3386, as Clifford Davis, Tampa, Fla., followed with 3317. It's wonderful to see these juniors doing so well in Int'l.

A 3243 gave Virginia Williams the 3-Position Smallbore Ladies' Championship.

This brings us to July 14 and the conclusion of the U. S. International Smallbore Rifle Prone Championship, which was merely a practice match as far as the Olympic Team was concerned. Conditions were a combination of hot, damp, cloudy, and calm, as Pres Kendall accepted the challenge of being underdog going into the 3rd time over the English Match course. Marines Charles Ainscoe and Jim Hill were down 8 and 9 points, respectively, to Kendall's 13. Apparently deciding to avoid another tie at all costs, Pres really bore down and got through with a 598. This equalled the National Record held by Candy Jensen, of which Ed Caygle should have been recognized as a co-holder (his 598 was fired Dec. 7-8, 1962 at Lackland AFB, Texas). National Records are not static, however, and before Pres could collect his co-holdership, the Record had been raised to 599 by Sgt. Ray H. Green, USMC!!! Let me remind you that the World Record still stands at 595. It seems incredible that such scores can be fired when some of us have difficulty firing possibles on the large standard targets.

In capturing the Nat'l Int'l Prone Championship with a record-breaking 1785X1800, Pres Kendall wiped out Bill Krilling's match record, established a year ago, and edged the Marines—Hill—1784; Ainscoe and Green—1782 . . . 41 were entered . . . Among civilians the winners were John Wirter—1769; Philip Bahrman, 2nd place and Hi Junior—1758; Virginia Williams—3rd place and Ladies' Champion—1753.

Virginia's counterpart in the pistol championships was 1/Lt. Gail N. Liberty, USAF, who took all three Ladies' titles. In Free Pistol, she scored 1544; Rapid Fire Pistol—1717, a new Women's Record, as was her 1742 Center Fire.

According to a newspaper release, in addition to the 10-man team, "five alternates, one for each event, also will be chosen." Ordinarily this would not be newsworthy as far as shooters are concerned, for we would naturally assume that at least one alternate for each event would be included in a competition as important as the Olympic Games. (After all, common sense and experience dictate that adequate provision be made in anticipation of possible illness, gun trouble, or other disturbing influences which could occur at a most inopportune time.) There has been, however, a distressing rumor to the effect that no alternates will travel to Tokyo. We earnestly hope that this was but a rumor—an erroneous one.

Proceeding on the assumption that our team will be reinforced to give it sufficient depth, let us consider the selection of alternates. At 300-meters, the top four—Anderson, Gunnarsson, Wigger, and Pool—already have passage booked to Tokyo. So, logically, the alternate spot would be passed down to Pan-Am veteran Bill Krilling in 5th place, 2 points behind Pool. Having just won the 4th Annual Inter-Service Int'l Smallbore 3-Position Championship with 1152, Krilling, who was the Inter-Service Free Rifle and English Match Champ in 1963, can hardly be considered a slouch when it comes to holding up his end of a team . . . In addition to tying Wigger in the 3-positional smallbore and winning the English Match competition, Pres Kendall, with 1152, placed second to Anderson's 1154 in the Inter-Service Free Rifle Championship, and would be the undisputed alternate for smallbore.

While USA MTU captured all 4 rifle spots, the USAF took care of 3 of the 4 pistol positions, the remaining one going to the Marine Corps. Rounding out the 1964 U. S. Olympic Team are the following: Rapid Fire Pistol: Capt. William W. McMillan, USMC, from Turtle Creek, Pa.,—1766; S/Sgt. Edwin L. Teague, USAF, of Chandler, Ariz.—1757. (Alternate: SFC William Blankenship, USA—1754). Free Pistol: Capt. Franklin C. Green, USAF, of Phoenix, Ariz.—1664; Capt. Thomas D. Smith, III, USAF, San Antonio, Texas,—1663. (Alternate: S/Sgt. Hershel L. Anderson, USA—1662). Clay Pigeon: Mr. Frank Little, Endicott, New York—288; and 1/Lt. William C. Morris, III, USA, of Russell, Kansas—287. (Alternate: 1/Lt. Gordon D. Horner, USA—286 or 1/Lt. James R. Clark, USA—286) . . . It's a good, strong squad!

The U. S. Int'l Shooting Championships were conducted by the United States Army Infantry Center at Fort Benning, and sponsored by NRA.

Some 25 years ago, a West Coast shooter made the pilgrimage back to Perry. This, in itself, is not unusual. What was unique was the nature of the prize which he took home from the National Matches—a Port Clinton belle as his wife. Subsequently, she became a legend after firing a no X possible to win a 100-yd. match at Camp Perry.

Our deepest sympathy is extended to Ruth Davis, for L. C. is another of our friends who has cleaned his rifles for the last time. He will be truly missed, not only at the Los Angeles Rifle & Revolver Club, but by many of you. Photographic work by L. C. Davis has appeared frequently in P. S.—but the June-July cover photo of Bill Grater was his final contribution to the game he loved so well.

It was through the British Rifleman that we learned of Bob Sinclair's great loss. We were indeed grieved to learn that Mrs. Sinclair passed away at her brother's home in Manchester, Mass., in the late spring. Always together, she accompanied Bob to Bisley, to several of the Scottish National Rifle Meetings, and to tournaments throughout the U. S. . . . Bob will be at his Elkhorn Ranch, Bozeman, Montana, until the end of September. I'm sure that he would appreciate hearing from his friends.

Tournament Circuit

(Continued from Page Five)

drive late getting home. With no alibis the tournament took only 8½ hours and all awards were distributed by 5:30 P. M. The lack of alibis had no effect on determining the aggregate winners and competitors did not seem to mind. The Cedar Rapids Club will put on future 2700 point tournaments with this rule.

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Virgil Dye, Deputy Sheriff of Marshalltown, Iowa, was the grand aggregate winner with 2555-82x. He won the .45 cal. aggregate with 847-25x and was 2nd in the .22 cal. and center fire aggregates. Runner-up Charles Woodford of Long Grove, Iowa, with 2552-90x won the .22 aggregate with 862-31x and was 2nd in the .45 cal. aggregate. With a 3rd place score in the grand aggregate of 2542-69x, Roy Watson of Marshalltown won the center fire aggregate with 862-26x.

Class winners were: Expert—James Swanson, Burlington, Iowa 2519-46x; Ralph Colby, Cedar Rapids 2474-53x; and Sharpshooter—Lee Meikle, Cedar Rapids 2412-43x; John Moore, Moline, Illinois 2395-32x; and Bob Willenborg, Cedar Rapids 2368-36x. Marksman—Roland Loge, Mason City, Iowa 2392-46x; Ivan Moore, Newton, Iowa 2359-31x; and Judd Longerbeam, Cedar Rapids 2341-25x.

Paul Kosek

VERMONT HIGH-POWER RIFLE CHAMPIONSHIP

A record entry of 60 shooters participated in the Vermont State High-Power Rifle Championship matches on the National Guard range in West Bolton on July 19th.

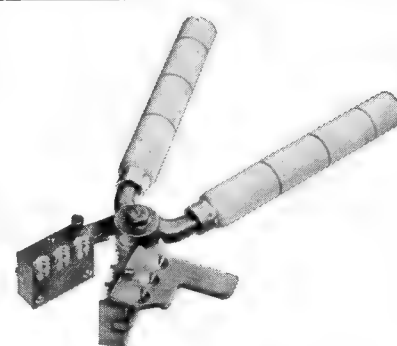
Creighton Audette of Springfield, Vt. (P. S. Inc. Pres.) topped the field by 2 points with his 246-16V score for the National Match Course to continue his reign of more than a decade as Vermont State High-Power Champion. Audette has been beaten a very few times in Vermont matches by a non-resident shooter, but those few times he retained his resident title, usually as grand aggregate runner-up. This year he shot a 48 standing, 50 sitting rapid, 49 prone rapid and 99-10V at 600 yards.

Audette's clubmate James Gomo of Springfield was runner-up with 244-24V. He was also top bolt-gun shooter at 600 yards with his 99-14V score. (Larry McCracken from Plattsburg AFB, N. Y. scored 100-10V with Service rifle at 600 yards.)

George Pratt from Pownal, Vt., always a threat to but as yet unable to dethrone Audette, was in third place with 244-17V.

Dexter Grant, a National Guard shooter from Lyndonville, Vt., was high in Service Rifle category with 241-12V. McCracken was second with 240-18V.

Thomas Mansfield had high standing score of 49-2V. Everett MacArthur's 50-4V was high at sitting rapid and Gomo's 50-4V was tops in prone Rapid fire.



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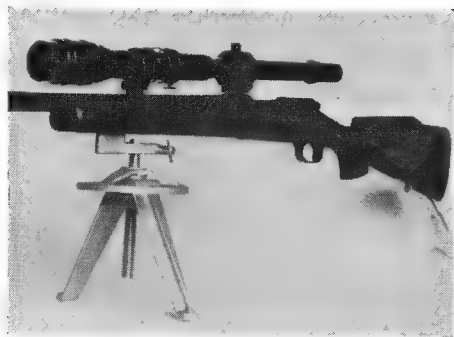
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THE MICRO-REST

The Micro-Rest, manufactured by the Micro-Rest Corporation, 217 Merrick Road, Amityville, New York, is designed for long range precision field shooting. The set of rests consists of a bi-pod front rest attached to the rifle forearm and a single prong butt-rest attached to the bottom of the butt-stock. Both rests are screw adjustable for elevation.

The rests require a plate to be inletted into the bottom of the forearm and butt-stock. Each rest is fastened to its plate with two screws. Attaching and detaching the rests from the rifle is a simple and not too long operation but not one that would conveniently be done between shots in the hunting field.

Elevation of the front rest is accomplished by means of a $\frac{1}{8}$ inch threaded rod through the top of the bi-pod, which is raised and lowered by means of the hand-wheel. The top of the rod screws into (and clamped by a lock-nut) the male section of a semi-ball and socket joint. The female section of the joint (which includes the plate fastening to the forearm) is split at one end and clamping friction is applied as needed by means of a thumb-screw. This semi-ball joint permits leveling the rifle when the bi-pod feet are resting on a side slope, and also permits the rifle to recoil without dragging the bi-pod feet along the ground. The elevating screw has a range of approximately four inches. To permit free movement through the bi-pod head, there is a slight amount of side-play of the elevating screw in the bi-pod head, which is most noticeable when the screw is at its highest elevation. The bi-pod legs are 7 inches long and the feet have a spread of 8 inches.

Elevation of the single prong butt rest is controlled by a threaded sleeve.

For testing the rest I attached it to a full-barreled 308 Norma Magnum rifle, simply because the forearm of that rifle was inletted for the rail of an adjustable sling swivel hand-stop and needed no additional inletting. Recoil of this rifle forced the end of the prong butt-rest well into firm ground. A fresh set-up would be required for a following shot. This admittedly was a heavy recoiling rifle, but any rifle really suitable for precision long range varmint shooting would have recoil enough to force that butt-rest into firm ground.

For those who like field rests, this Micro-Rest would seem to me to be superior to any unattached-to-rifle portable rest that I have happened to see. Its chief use drawback would be the same as for any prone shooting—it would require a reasonably well cleared spot to shoot from. Transportation of rifle with attached rest from a vehicle to a nearby shooting stand would be no problem, but for any long distance foot transportation it would be an awkward rig to lug.

The rests are well made from an aluminum alloy. The rests may be used on more than one rifle by inletting inexpensive available plates in forearms and butts of the additional rifles. The rests carry a lifetime guarantee and the retail price is \$29.95.

P. H. T.

NEW .225 WINCHESTER CARTRIDGE AND NU-LINE GUNS, INC.

By John H. Culling

Winchester Western Division of Olin Mathieson Chemical Corporation has just announced that they will release the .225 Winchester cartridge and rifles to handle it August 1. This hot bottleneck cartridge has a 0.473 inch diameter rim and very straight body with a 25° shoulder. The choice of a rim diameter equal to the .30-'06 head diameter means that no bolt face alteration is required when rebarreling any action in this head diameter family of rimless cartridges to the .225. Thus no bolt alterations would be required to convert .308 Winchester, .243 Winchester, .250 Savage, .358 Winchester, 6mm Remington, .22/250, .270 Winchester, 7x57mm, .280 Remington, and many others.

The capacity of this case is just about identical to that of the Improved .219 Zipper. The factory loaded ammunition is to be equivalent to 33 grains of IMR 4064 behind a 55 grain pointed soft bullet which should result in about 3650 feet per second muzzle velocity. A 45 grain hand load bullet could be driven at about 3900 fps or perhaps even 4000 fps. Accuracy life should exceed that of the .22/250, the .243 Winchester, and the .270 Winchester. The minimum body taper spells easy extraction and excellent reloading brass life. The case volume is greater than the .222 Rem. Mag. and the Donaldson Wasp and less than the .22/250 and the Swift. The .225 will be furnished by Winchester in the Model 70 with either standard weight or bull barrels.

In April, 1963, it was reported in Precision Shooting that Nu-Line Guns, Incorporated, 5125 Natural Bridge, St. Louis 15, Missouri, had bought out the well-known Ted Holmes Gun Shop of Mattoon, Illinois. Jerry Stevens who is running Nu-Line was fortunate in obtaining the personal direction of Ted Holmes himself in setting up the barrel-making machinery.

Nu-Line with 4 full-time and 3 part-time employees has by now turned out hundreds of barrels either as rebores and re-chamber work or complete work from steel blanks. They furnish custom barrels in 60 days or less.

Nu-Line was producing test barrels for the .225 Winchester Express cartridge as far back as 6 months ago. Jerry recently shot a .686" 200-yard 5-shot group with a Model 93 Mexican Mauser chambered for the .225 in a 28" long chrome-molybdenum steel barrel measuring .898" at the muzzle. The load was 29.5 grains of IMR 3031 and 54-grain bullets custom made by Art Freund. The stock was inletted by Jerry from a utility grade Fajan blank, and the whole rig weighed 12½ pounds including a 20x scope. Before shooting had progressed very far trouble was encountered in the scope reticle and groups began to open up. A 10X Weaver has been temporarily installed on this rifle, with which .7" groups are easily attainable using factory ammunition. The .225 Express should be a fine choice for varmint and should become a real contender in the accuracy record book.

Despite their newness in the barrel making field the people at Nu-Line have already made about 30 test barrels for major arms manufacturers. Some of these were for new cartridges before they were marketed and others for those already out. They include barrels for pressure tests, velocity tests, accuracy tests, and accuracy life testing. One such test recently conducted on a stainless barrel by Nu-Line was reported by the arms firm to give three times the life of SAE 4140 steel barrels for the .264 Winchester Magnum cartridge.

Of course most Nu-Line barrels are on individual owner jobs. On May 16, Robert Freund fired a 100 yard 5-shot group in light varmint class of .178 inch with a Nu-Line barrel on a 722 action. This target is being checked for record recognition.

Nu-Line offers custom barrels including stainless in all calibers from .17 to .458. They will soon offer their own actions for sale.

57,295.779 PSI MAXIMUM PRESSURE

Such a pressure reading has value only with reference to other numbers with all conditions specified. The indicated accuracy is false because the very latest and best pressure equipment has precision only within plus or minus 3% and accuracy not that good for individual readings. Individual readings by the crusher control method are possibly plus or minus 10% in reliability. This forces the averaging of many readings.

It is quite possible to calculate maximum pressure estimates within plus or minus 10% and, if chronograph data are available, this can be reduced to plus or minus 5%. The reason for calculating estimates is for comparisons only when changing the conditions of loading. Maximum pressures alone do not give sufficient information for the use of guns. What really is of value is the entire change of pressure all during the bullet travel. Pressure vs Time curves give the basic measurements, but the full story has to be developed by computation; with calculus at that.

"Maximum pressure" is a sort of ballistic shorthand term which has meaning to those who understand the entire pressure pattern. The particular method used has to be specified since most methods do not give the real value.

Simple maximum pressure measurements bear some relationship to safety and have been interpreted by the Arms Manufacturers who provide ammunition within maximum safe limits for the various guns. A few of the manufacturers tell you what these loads are, and they should not be exceeded. Handloaders frequently ignore these, but then they are exercising all the skill and brains required to drive 75 where the speed limit is 60.

Maximum safe loads will, in certain cases, produce severe erosion. A purchaser of elephant-killing loads will never require his gun to last for a thousand kills, but another man may expect to use his gun for a thousand or more kills on varmints. This other man should not burn out his gun with maximum safe loads.

A pressure gauge will easily show an increase of, say, 10% in maximum pressure just by going from a bullet of a given weight to another of the same weight with longer bearing length. This will not result in enough change in the overall pressure pattern to produce any more than about 2% change in energy or 1% in velocity. So long as the loading is at, or below, a safe maximum, such a mechanical change in maximum pressure is of no practical consequence.

Handloaders who do not have velocity and/or pressure instruments and who depend only on mechanical indications to find what they call "maximum" loads are by no means in a safe area. On the other hand, undertakers are not complaining of receiving large numbers of headless corpses from former handloaders.

(Part of Technical Memorandum ED-17—August 1964—from MARIAN POWLEY, 17623 Winslow Road, Cleveland, Ohio

By Homer S. Powley

LATE MATCH REPORTS

SMALLBORE RIFLE

Forty-five competed in the Vermont State Smallbore Rifle Championship tournament, conducted by the Prosper Rifle and Pistol Club, July 26th, on its range near Woodstock, Vt. (See photo on page 9). Nine of the competitors were Juniors, one of whom nearly 'stole the show.' It was a sunny day with moderate temperature but a tricky breeze and mirage condition seemed to keep many of the competitors more than a little baffled.

James Gomo, Springfield, Vt. won the State Championship with a score of 1595-118x, with Jr.-Ex. Carl Morrison from Bangor, Maine only 11 X's behind him in runner-up spot. Vt. High-Power Champ Creighton Audette was third with 1593-101x. High Lady and High Expert Charlotte Farnum, Chester, Vt. was fourth over-all with 1591-110x, and High Sharpshooter Lyndon Squires, Brattleboro, Vt. was fifth over-all with 1588-93x.

A traditional match at the Vt. State Shoot is an aggregate of the 40 shot any sight prone match at 100 yards plus a 20 shot offhand match at 100 yards with any is usually (but not always) the aggregate sights. The winner of the offhand match winner, and this year was no exception. Charles Langmaid from Brattleboro, Vt. won the offhand match with a 191-3x score to beat Carl Morrison's 190-3x, and the aggregate with 590-19x to Morrison's 589-30x. (Expert Francis Beaubien, Turner Falls, Mass. took third place in the offhand match with a 188-2x; Sharpshooter Dale Rowe, White River Jct., Vt. was fourth with 184-4x; and Master class Edgar Allen, Essex Junction, Vt. was fifth with 181-3x—and all placed in that order in the aggregate.

Gomo won the 100 yard any sight match with 399-29x and Morrison was runner-up with 399-27x. Morrison won the 100 yard iron sight match with 398-20x to beat the 397-17x by Carl Claus from Wilbraham, Mass. Gomo won the 50 yard iron sight match with 400-31x and Claus was second with 400-26x. Douglas Fuller from Woburn, Mass. out-ranked Gomo to win the 50 yard any sight match, both having 400-34x scores, while Robert Howe from Brattleboro took the High Expert award with another 400-34x score. The Vermont NRA State Postal Team unofficial score was 3929-183x.

BENCH REST MATCHES

AUGUSTA, OHIO: At the Reed's Run Rifle Range shoot July 4th and 5th, 24 shooters competed in the unrestricted rifle class and 9 in the heavy varmint class. All shooting on July 4th was at 200 yards and all 100 yard shooting on the 5th. An aggregate for both 5-shot matches and 10-shot matches for unrestricted rifles was fired at each range.

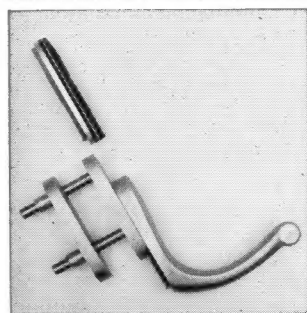
The aggregate award winners for unrestricted class were: Five-shot matches at 200 yards—1st Omar Rinehart .4302 MOA, 2nd George Kelbly .4402. Ten-shot matches at 200 yards—1st Robert Hart .5027 MOA, 2nd Omar Rinehart. Five-shot matches at 100 yards—1st Kenneth Gilbert .3684, 2nd Paul Gottschall .3692. Ten-shot matches at 100 yards—1st A. M. Angerman .4144, 2nd H. L. Culver .4420. Grand aggregate of five 10-shot matches at each 100 and 200 yards (NMC)—1st Robert Hart .4852 MOA, 2nd Edith Culver .5356.

In heavy varmint class, Harold Campau won all the aggregates, having .6687 MOA for five 5-shot matches at 200 yards, .4852 for the five 5-shot matches at 100 yards, and .5769 MOA for the two-range grand aggregate. Ted Boughton was 2nd at 200 yards with .6722. M. E. Coughenour was second at 100 yards with .5786 and in the grand aggregate with .6899.

(Continued on Page Eighteen)

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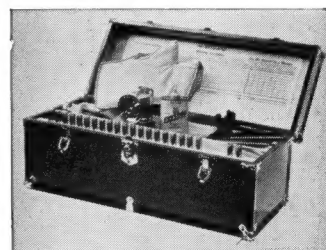
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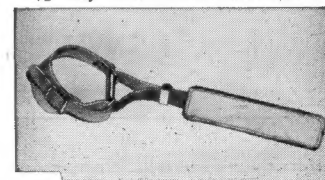
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Late Match Reports

(Continued from Page Seventeen)

A registered night shoot at Reed's Run Rifle Range on August 1st had 9 competitors shooting five 10-shot matches with unrestricted rifles at each 200 and 100 yards. George McMullen was 1st at 200 yards with .4036 MOA, and Ralph Pickens was 2nd with .4452. George McMullen was also 1st at 100 yards with .3682, and in the grand aggregate with .3809 MOA. Bernice McMullen was 2nd at 100 yards with .3716, and in the grand with .4177.

AT CANTON, OHIO, fifteen competed in the Canton-McKinley Rifle Club varmint class matches on August 1st and 2nd. James Anderson, Canton, placed in all five 5-shot matches to win the aggregate with score of 250-22x and group aggregate of .3488 MOA (all shooting at Canton is at 200 yards). W. C. Davidson, North Canton, was runner-up with 249-20x score and group aggregate of .5460. Clem Mervis of Lorain, Ohio, was 3rd with 249-17x score and group aggregate of .4202. C. L. Griffith, Canton was 4th with 249-13x and .7144.

Anderson shoots a 222½ in Hart barrel on Remington action; Davidson a 222 in Douglas barrel on Remington Action; Mervis a 222½ in Shilen built rifle; and Griffith a 222 in Douglas barrel on Mauser action.

Again there were 15 shooters at the Canton night matches for varmint class on August 7th and 8th. And again Anderson won the five-match aggregate, but missed placing among the top three in one of the fired matches. His aggregate score was another 250-22x and his group aggregate .5002 MOA. Mervis was 2nd at this shoot with score of 249-16x and group aggregate of .5001 MOA. H. R. LaChat, Canton, was 3rd with 249-15x and .5857 MOA. LaChat was shooting a 40X Remington 222.

AT ALLENTOWN, PENNSYLVANIA, the Crooked Creek Benchrest Shooters had to cancel their first three semi-monthly shoots of the season due to the wet Spring keeping the ground so soft that heavy equipment was unable to work on the range reconstruction project they had under way. Their first shoot was held on June 21st.

The program for this group has consisted of two classes, one for 22 cal. rifles of Varmint weight, and one for larger bore

rifles. This season they have added a class for "deer rifles," and at some of their shoots have fired 10-shot matches with the 22 cal. rifles in addition to the 5-shot matches. They shoot two groups in each class and the smallest group counts for their record. They have from 9 or 10 to a dozen or more shooters participating in the matches, some of whom shoot in all classes in the day's program while others shoot in only one or two of the classes.

This seems to be essentially a local group program, but IT IS bench rest competition and there are undoubtedly a considerable number of other clubs having somewhat similar club programs that we hear nothing about. It would be desirable, and we believe good for benchrest shooting, if we could have reports of more of these local programs.

TO START THE BALL OFF on a bit dissimilar tack, our local St. Johnsbury Gun Club (Vt.) authorized me to construct a simple four-bench set-up on our 100 yard range this past Spring, and conduct some matches. The range is primitive, simply four uncovered wooden benches and a 2"X1" framed half-sheet of plywood to hold the four targets. Other than a little sighting-in of rifles and testing handloads from the bench, there are no bench rest shooters in our club, but there are several who have gotten started in benchrest competition within a 125 mile radius, with no near-by opportunity for competition.

We have held three shoots for unrestricted bench rifles and one for .22 L. R. rimfire rifles. Maximum entry has been eight shooters and a minimum of five. We couldn't comfortably handle more than twelve for the programs we have fired.

Since we have no moving backer, and are limited to 100 yard range, we have had an odd-ball program for the bench rifles of five 5-shot matches for group on NBRSA targets and followed that with five 10-shot matches for score on the NRA A-17 50 ft. gallery rifle target, firing one shot on each of the 10 record bulls. That target, with its .15" 10-ring affords plenty of challenge to precision shooters; our record to date, in our last shoot by Ira Farnsworth from the Burlington, Vt. area, is an aggregate of 481 X 500, with consecutive target scores of 96-96-96-97-96.

At the rim-fire shoot we shot an aggregate of five 20-shot matches on NRA A-23 50 yard tournament targets at 100 yards range. Best aggregate score was 960 X 1000 by Dale Rowe from White River Jct., Vt., but competition was close enough to be interesting. Don't know whether interest in the rimfire shoot can be built up or not, but we'll try again.

Our shoots are odd-ball and small-potatoes in the match world, but here on the outer-rim of benchrest activity they offer a few shooters some conveniently located competition and they seem to enjoy that.

We plan some deer hunting rifle shoots to try to promote some interest in benchrest shooting among our local hunter-riflemen—how successful that effort may be is anyone's guess as of now.—P. H. T.

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BARREL FRICTION

An Experimental Ballistics Associates bulletin

INTERNAL BALLISTICS is perhaps most important of all to us. This is the part we can have something to say about, we can make our own loads.

What happens inside a gun is a matter of fundamental physics. Relations of energy, gas expansion, incremental volume, temperature and work determine the effects. All of these equations are in terms of ideal science parameters. There is no allowance for friction.

WHAT ABOUT BARREL FRICTION? We all shoot bullets through clean bores and fouled bores. Does this sort of thing have any effect?

To consider some examples, a .22 rimfire bore would have some powder residue in it. Wouldn't any .22 Long Rifle bullet plow this out without pause?

Or take a .44 percussion revolver with 8" barrel, the black smear and loose smudge in the bore after a shot should not impede a big .44 (.454") slug, or should it?

What does powder fouling do to bullet velocity in our guns?

FRICTION: Anything that retards a bullet slows it down. Its velocity is less. Ideally a rifle bore would offer no resistance to the bullet, but they do, and velocity does fall off.

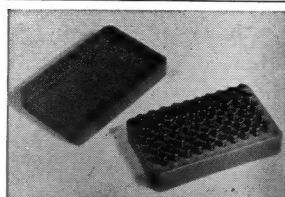
We cleaned a .44 muzzle loading revolver after every shot. The velocity increased by 50 f.p.s. in the 8" long barrel of a Centennial Arms revolver, 20 shots being fired both clean and fouled.

Black powder is pretty dirty, and though that fouling looks soft, it drags on that bullet.

.22 Long Rifle rimfire ammo leaves little visible coating in bores. Nonetheless, it, too, puts a fouling in the bore that slows down a bullet.

Six ten shot groups through clean bores (cleaned after every shot) averaged 1182 f.p.s., while four ten shot groups through fouled bores averaged 1141 f.p.s. There was a remarkable cohesion in these readings. The clean and fouled bore values fell into two distinct groups with no real overlap of readings. **BORE FOULING CUTS VELOCITY.**

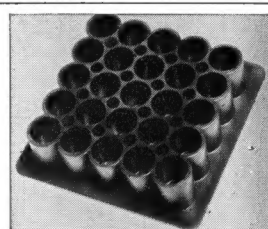
All forces that slow down a bullet inside a gun reduce its final effectiveness. If you could clean your rifle bore before each shot, a higher muzzle velocity would result. This is not practical, but look at the results!



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The fouling in a .22 Long Rifle rimfire bore consists of shreds of lead and a carbonaceous material.

When one looks through the bore, this seems to be a light powder or smudge. But when a patch is passed through the bore and is examined, the carbon smudge seems quite granular, and the lead is in the form of flakes, shreds and slivers. Later patches, while they bring up color, are devoid of the lead shreds and the carbon grit.

Evidently the residue from each shot sets up the normal resistance. We say this because every shot fired after a previous one, no matter how or when the bore was cleaned, shows a similar velocity. Just one shot seems to put down the friction causing fouling.

To look at it another way, it would seem that each bullet fired cleaned out the fouling ahead of it. The evidence shows that the work to do this does cause a measurable decrease in velocity. So, it would seem that each round lays down a film of girt and other residue that does slow up bullets, and does cause a lower velocity than would have been found from a perfectly clean bore.

One would assume that a tight lead bullet traversing a rifle bore would force ahead of it the bulk of any deposit. This must be what it does. Velocity readings are uniform in fouled bores to the extent they are in clean barrels.

MANY TYPES OF CLEANING were tried. This seemed to matter little. If the granular material, the lead shreds and powder girt were removed, the velocity went up. Leaving a film of oil in the bore doesn't help.

In fact a perfectly dry bore, brushed clean after every shot, to the sight clean, and clear of any visible fouling does give as high velocity as a bore cleaned by any other means. A bullet that is coursing up a tight tube probably overruns any fouling ahead of it. The skirt of the bullet must drag out about as much fouling as builds up. This would explain a constant velocity measurement for bullets in fouled (normal) bores. The fact that often accuracy stays about constant though the gun is shot even a thousand rounds between cleanings would indicate this to be true.

Oil or grease, though thought to be lubricants, are seldom of any use at very high pressures. In the forming of steel usually soaps are used for the drastic operations calling for ultimate lubricating properties. Soaps will maintain a film of lubricating quality up to 600,000 lbs. per square inch. They are thus chosen to do the toughest jobs of high strength steel wire drawing. Wires with a tensile strength of 275,000 lbs. per sq. in. may be drawn through dies using a soap film lubricant.

Dry and clean bores proved to offer least resistance to bullets in our tests. Mechanical cleaning proved to be as good as the use of solvents or fouling removing compounds such as Hoppe's No. 9.

E. M. Yard, coordinator

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The quality of **DOUGLAS** barrels has been proven many times on the target and in the field, both big game and varmint shooting. These barrels hold many records on the target, in bench rest, big bore, and small bore target work. We receive new reports all the time, attesting to their excellence, from the target shooter and hunter. We feel that we are making the finest production made rifle barrel available in the world today. Further, our wide range of sizes and weights, variety of calibers, deliveries, prices and discounts to gunsmiths, add up to a service that is not available from any other barrel maker in the land.

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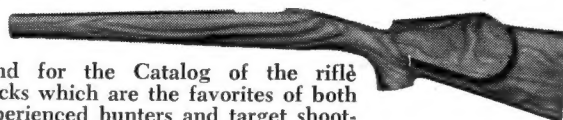
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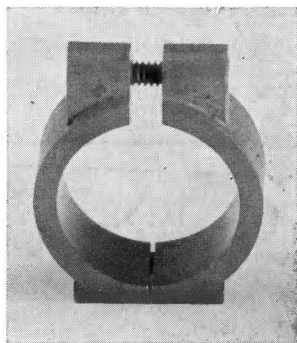
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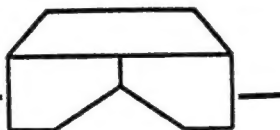
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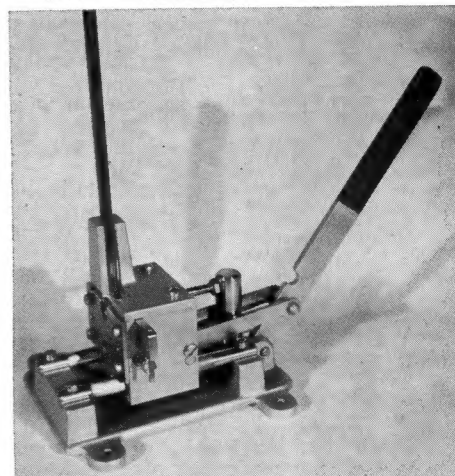
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